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A uses and gratifications study of the Internet

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ABSTRACT

A USES AND GRATIFICATIONS STUDY OF THE INTERNET

By Kristin Deann Butler

This qualitative study's purpose was to explore the Internet. Twenty Internet users kept daily logs and participated in interviews. It found that the Internet could be used for diverse purposes which coincided with the individual needs and desires of the participants. A new typology of Internet use was developed. Participants used the Internet for one or more of the following purposes: Work communication, work information, leisure communication, and leisure information. The Internet affected users' lives in diverse ways, depending on reasons for their usage.

The study found that most of the participants gained first knowledge through interpersonal contact. A pattern of previous computer networking experience before Internet adoption was also found among these participants.

Participants listed a series of reasons for the Internet's popularity, and these were grouped under the diffusion of innovations characteristics of relative advantage, complexity, compatibility, trialability, and observability.

The study also uncovered the existence of a conflict raging within Internet culture between the older and newer users regarding Internet etiquette, or "netiquette."

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TABLE OF CONTENTS

I. Introduction 1
Purpose of Study 3
Overview of Methods 3
Major Theoretical Concepts 5
Uses and Gratifications 5
Diffusion of Innovations 7
Research Questions 9
Significance 10
II. Literature Review 12
Review of Technology 12
The Internet Definition and History 12
The Internet Growth and Population 14
The Internet Functions 15
Communication 15
Entertainment 16
Information Gathering 17
The Internet Access 21
What is Wrong with the Internet 22
Communication Theory 23
Uses and Gratifications Theory 23
Uses and Gratifications History 25
Uses and Gratifications Criticisms 27
Uses and Gratifications Research:
Continued Growth 28
Diffusion of Innovations 34
Useful Terminology 36

Criticisms of Diffusion of Innovations Theory 39
Recent Studies in Diffusion 40
Summary and Research Questions 43
III. Research Method 48
Overview 48
Sources of Data 51
Collection of Data 52
Log Entries 52
Interviews 53
Analysis of Data 54
IV. Findings and Discussion 56
Overview 56
First Level of Analysis: Choosing Participants 56
Participant Characteristics 58
Patterns of Participants 59
Second Level of Analysis: Comparing Log Entries to Interview Responses 60
Third Level of Analysis: Comparing Participants' Responses to Each Other 61
Patterns of Use 61
Needs and Desires Override Demographics 61
Functional Patterns 62
Effects of Access Type on Usage 64
Analysis of Adoption 65
Adoption: Communication Channels 65
Adoption: Previous Computer Use 66

Adoption: Previous Networking Experience... 66
Military..... 66
Commercial Services..... 67
Bulletin Board Services..... 68
Work..... 68
Adoption: Continued Interpersonal
Communication..... 69
Family..... 69
Other Personal Contacts..... 70
Coworkers..... 70
Adoption: Participant Insights..... 71
Mass Media..... 71
Previous Networking Experience..... 72
Home Computer Use..... 73
Company Use..... 73
Lower Cost..... 74
Technical Improvements..... 75
Critical Mass..... 75
Adoption: Summary..... 75
Effects of Use..... 76
Effects: Individuals..... 76
Television..... 76
Telephone and Postal Mail..... 77
Reading Newspapers, Magazines,
Books..... 77
Advertising and Shopping..... 77
Socializing..... 77

Other Substitutes..... 78
Substitutes: Summary..... 78
Effects on Lives..... 78
Effects on Society..... 79
Internet: Concerns..... 81
Netiquette and Adoptor Categories..... 82
Summary..... 88
V. Summary and Conclusions..... 91
Overview..... 91
How are People Using the Internet?..... 92
How are People First Gaining Knowledge About the Internet: Through Mass Media or Interpersonal Contact?..... 94
What Factors Shape Why People are Adopting and Using It?..... 95
What Effect does the Internet Have on Individuals and What Effect do the Participants Believe it will Have on Society?..... 98
As the Internet has Become More Popular, has There Been a Change in What Type of Users are Adopting it and Why They are Using the Internet?..... 100
Limitations..... 101
Contributions to Literature and Directions for Future Research..... 103
VI. Bibliography..... 106

VII. Appendices 113

Appendix A: Participant Demographics Questionnaire 114

Appendix B: Log Entry Prompts 115

Appendix C: Participant Interview Questions 117

Appendix D: Participant Profiles 121

Appendix E: Participant Demographics Chart 127

Appendix F: Summaries of Use 128

Appendix G: Adoption Profiles 149

Chapter 1
Introduction

New communication technologies have begun to change the way societies and individuals communicate. One of these is the Internet, the world's largest computer network. It was developed over 20 years ago. Yet, until recently, few people had heard of it and even fewer had ever had the opportunity to use it. Currently, though, a person cannot help but hear this popular buzz-word (Internet), alongside its cousin the "information superhighway." These words are spread across newspapers, bookstore shelves, offices, schools, and homes. The huge increase in the popularity of the Internet has caused researchers to begin to look at how it and other new technologies are affecting communication.

Two such researchers, Sandra Ball-Rokeach and Kathleen Reardon (1988), suggested that new communication media have transformed human communication, combining the dialogue of interpersonal communication with the monologue of mass mediated communication to create a new phenomenon called "telelogue."

Telelogic communication systems, Ball-Rokeach and Reardon (1988) said, appear to have the potential for development of new ways of organizing personal and social life. For instance, these new systems do not have the limitations of geographic range, time-boundedness, and capacity to serve societal goals that limit the organizational capacities of the interpersonal form. Nor do

they have the limitations of time-boundedness, limited feedback, low potential for interactivity, and low potential for equity of control that limit mass forms' organizational capacities. Telelogic communication also has the added capacity for extremely high storage.

Ball-Rokeach and Reardon (1988) noted that telelogic communication will not replace conventional interpersonal and mass communications, but that the older forms will accommodate this new addition. They said that development of telelogic communication systems will grow and what effects they will have on individual and societal life are not all clear. Recent articles suggested that the Internet will destroy privacy and create tyranny. Other articles proclaimed that the new technologies will revitalize community and democracy, ruralize work and residence, or create a global village.

Recent observations suggested that some changes already seem to be taking place. For instance, rural regions of the United States are beginning to grow again because of the Internet (Richards, 1994). The Internet is changing the homework habits of America's children (Flinn, 1994). It may have implications for theft and espionage (Meyer, 1994) and also for policing practices. The Internet may change how people communicate with and about their government (giving users their own gatekeeping power) (Schwartz, 1994), and it may change how governments communicate with each other. It could alter the power of minorities (Silberman, 1994), and it could more greatly divide the "haves" from the "have nots."

These and similar changes may point to alterations in the way people are choosing to communicate with one another.

PURPOSE OF STUDY

The Internet can serve a variety of functions for the people who use it. As researchers have noted, it can be used for interpersonal or mass mediated messages. It can act as a telephone or a postal service, a library, newspaper, or magazine, and a meeting hall or a singles bar. One purpose of this study was to explore and describe how and why people are actually using the Internet.

Another purpose was to explore why the Internet recently became so popular. The researcher wanted to find out how people became involved with this new technology and what patterns existed in the decision making processes that led them to try it.

A third purpose of this study was to gain some insight into how this new technology was affecting people's lives as well as their communication choices. Was the Internet having an impact on user's everyday behavior? Was it displacing previous forms of communication technologies or were these older forms accommodating the new technology, as Ball-Rokeach and Reardon (1988) suggested?

OVERVIEW OF METHODS

An exploratory study like this, one that is attempting to investigate such a relatively new phenomenon as the use and popularity of the Internet, was best approached by qualitative methods.

Qualitative methods are particularly oriented toward

exploration, discovery, and inductive logic (Patton, 1990). Inductive analysis begins with specific observations and builds toward general patterns. These patterns, in combination with past literature and theory, can be used to develop new knowledge, predictions, and hypotheses about the phenomenon under study. Such information is not generalizable to other populations, but is instead to be used as a starting point for future studies (Patton, 1990).

The researcher chose 20 Internet users to participate in this study. A message was posted on the Internet, on a commercial service, and on a bulletin board service (BBS) asking for volunteers to participate in a study about computer use. Once the participants were chosen, they each kept a daily log of their Internet activity for 10 days, sending it to the researcher every evening.

Next, each of them participated in an in-depth interview. They were asked how they first got involved with the Internet, how and why they used the Internet, and in what way the Internet was affecting their lives. They also were asked how they thought the Internet was affecting the society around them.

The researcher then analyzed all the data, searching for patterns in the participants' responses. Several levels of analysis were employed throughout this study. The first level took place during the choosing of participants. The researcher paid special attention to what types of people responded to the original message.

The next level took place when the researcher compared

each participant's log entries to their interview responses regarding Internet use. The researcher compared the answers to these two different data collection techniques in order to strengthen the credibility of the findings.

The third step was a cross-case analysis that compared the participants to each other regarding their log entries and interview responses. The researcher analyzed the data and searched for patterns.

The fourth level of analysis involved comparing these patterns to the study's original research questions, which were developed earlier from the literature review. By comparing the patterns to the questions, the researcher was able to develop new knowledge, predictions, and hypotheses about the Internet.

This new information was used in the fifth level of analysis to suggest future directions of study about the Internet that other researchers in the field could take.

MAJOR THEORETICAL CONCEPTS

The researcher used past communication theory to help determine what direction to take in this study. The primary theory used was uses and gratifications theory.

Uses and Gratifications

Uses and gratifications theory suggests that audiences are active and able to filter mass media messages, and that they can also create their own responses to those messages (Bryant & Street, 1988).

Today's message receivers have abundant message options and they actively select from and act on these messages in

such a way as to construct subjective meanings from them (Bryant & Street, 1988).

Uses and gratifications theory is both a theory and a research strategy. The theory is the idea that audiences are active participants in their own media consumption and that they do know why they make the media choices that they make. The strategy is that these audience members can be asked about their media use decisions and that their answers are valid enough to be used in research studies.

Early uses and gratifications studies shared a common qualitative methodological approach: statements about media functions were elicited from respondents in an open-ended way and researchers would then group these statements into labeled categories, or typologies that listed functions of either specific contents or specific mediums. Typologies are at the core of uses and gratifications research and continue even today to identify and classify media use (Palmgreen, 1984).

Palmgreen (1984) stated that a major challenge confronting uses and gratifications researchers is the adoption and molding of the current conceptual framework to deal with new communication techniques. There may be no better theory to use when studying new communication technologies than uses and gratifications because the theory allows a researcher to ask audience members what is really going on with a new phenomenon such as the Internet.

Several techniques have been used in uses and gratifications studies, including self-report, observer

inference, and experimental manipulation. Self-report is the more commonly used method of the three, and it is the method that was used in this study. Through this method, typological studies have identified a great variety of motives for media consumption (Palmgreen, 1984).

Diffusion of Innovations

Pieces of another theory, diffusion of innovations, were also used in this study to help look at why the Internet has recently become so popular. The theory provides certain terminology that is helpful in talking about how users got involved with the Internet.

Diffusion of innovations is a theory that is usually used in quantitative studies that are designed to follow the diffusion of a certain innovation over a long period of time, statistically measuring adoption rates among adopter categories and generalizing the findings to predict the behavior of the society as a whole.

One of its main proponents, Everett M. Rogers, developed terminology that frames certain patterns that he has found in the diffusion of innovations.

Rogers (1983) suggested that during the diffusion of an innovation certain communication channels are used to pass messages from one individual to another. These can be either mass media channels or interpersonal channels. Rogers stated that mass media channels are more effective in creating knowledge of innovations, whereas interpersonal channels are more effective in forming and changing attitudes toward the new idea, and thus influencing the decision to adopt or

reject the new idea.

Throughout this study the researcher paid special attention to the communication channels that the participants used when they first decided to adopt the Internet. The researcher looked for patterns in how people discovered about and became involved with the Internet in hopes of developing new predictions and hypotheses about the Internet.

Rogers (1983) also stated that there are several characteristics that lead people to adopt or reject an innovation. One is "relative advantage," which refers to the degree to which an innovation is perceived as better than the ideas it superseded. Another is "compatibility," the degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters. A third factor is "complexity," the degree to which an innovation is perceived to be difficult to understand and use. The more complex an innovation, the slower it will diffuse. A fourth element is "trialability." This is the degree to which an innovation may be experimented with on a limited basis. The fifth factor is "observability," the degree to which the results of an innovation are visible to others. This study paid attention to which of these, if any of them, affected users' choices to adopt the Internet.

Rogers (1983) also developed five adopter categories that rate adopters according to how soon, in relation to one another, they adopted the new innovation. This study did not use these specific categories, but it did borrow the notion that there are differences in characteristics between newer

adopters and older adopters, and it paid attention to these differences.

One last diffusion idea used in this study was Rogers' (1983) suggestion that a study of diffusion should include a focus on consequences that adoption of this innovation brings to the individuals and to the society. This coincides with one of the purposes of this study, to find out how the Internet is affecting users' lives and how they think it is affecting society as a whole.

There have been many recent diffusion studies done on new media. One found that electronic bulletin board use entails a cluster of innovations, not a single innovation (Rafaeli & LaRose, 1993). These included the previous adoption of the computer.

Another examined factors related to the adoption of computing, how computers are used in households, and the social implications that extend from these patterns of adoption and use (Dutton, Rogers, & Jun, 1987). It underscored the expectation that adoption will lead to a variety of usage patterns ranging from nonuse to heavy use of computing for a variety of purposes. Patterns of use, versus adoption per se, were viewed as the major determinants of the impact of computing on the home.

RESEARCH QUESTIONS

This study focused on three main topics: What are people doing with the Internet and why; how is Internet use affecting individual users' lives and how do they think it is affecting society as a whole; and why has the Internet

recently become so popular.

The researcher used these general topics, combined with information from the literature review to develop five research questions for this study to focus on. They are:

(1) How are people using the Internet?

(2) How are people first gaining knowledge about the Internet, through the mass media or through interpersonal contact?

(3) What factors shape why people are adopting and using the Internet?

(4) What effect does Internet use have on individuals and on society?

(5) As the Internet has become more popular, has there been a change in what type of users are adopting it and in how and why they are using the Internet?

These research questions helped the researcher develop the interview questions. Later in the study they were also compared to the research findings in order to develop predictions and hypotheses about the Internet.

SIGNIFICANCE

This was a qualitative study that used log entries and in-depth interviews to explore the nature of a new media technology. It departed from previous communications studies in that it looked at a new technology, the Internet. This is important because the Internet is relatively unknown, yet has the potential to change the study of and behavior of communication.

The results of this study are useful because they add to

current and past uses and gratifications studies. They also add to the field's understanding of new media technology in general, and the Internet in particular. The patterns and predictions developed in this study can also serve as a spring board for future studies about the Internet.

The researcher's interest in this study stemmed from her recent involvement with the Internet as a communication tool at school, home, and work, and her interest in exploring how the Internet might affect her life, as a politically minded citizen, as a reporter, as a teacher, and as an individual who loves to communicate with and make new friends.

Chapter 2
Literature Review

REVIEW OF TECHNOLOGY

This was a qualitative study that used log entries and in-depth interviews. It had three purposes: (1) to find out how and why people are using the Internet; (2) to find out why it has become so popular; and (3) to find out how it is affecting people's lives and how it is affecting society.

In order to explore these questions, one must first understand the nature of Internet.

The Internet: Definition and History

The Internet is the world's largest computer network, a collection of computers, cables, and people. The Internet was never actually created as an entity of its own. It is, instead, an amalgamation of many earlier networks. In 1969, The Advanced Research Projects Agency, a part of the U.S. Department of Defense, set up the first parts of the network that would eventually become the Internet. The network was called ARPAnet, and it linked the military with defense contractors and universities.

The ARPAnet was a new type of computer network because it was decentralized, with no central computer running the show. This was for cold war security reasons, so that if one computer went down or was sabotaged, ARPAnet could automatically reroute information. ARPAnet first linked four

locations: Stanford University, University of California at Los Angeles, University of California at Santa Barbara, and the University of Utah.

ARPAnet expanded to nonmilitary uses in the 1970s when other universities and nondefense-related researchers were permitted to join the network. By 1983 most of ARPAnet was being used for nonmilitary purposes, so it split into two networks: one part became MILNET, a Department of Defense military-only network, and the rest remained ARPAnet.

In 1987, the National Science Foundation created its own network, called NSFnet. By the late 1980s, ARPAnet was absorbed by the NSFnet, which still remains a major "backbone" of Internet connections in the United States. Everywhere in the world educators, bureaucrats, and hobbyists were plugging their computers into networks, and those networks into the Internet.

The NSFnet charter's purpose was to support education and research. It was considered inappropriate to use that network for commercial purposes (Savetz, 1994). So, in 1991 a group of small commercial networks created a network of its own, the Commercial Internet Exchange (CIX). Now the commercial users were able to connect with each other quickly and legally. This meant commercial collaboration, technical support by e-mail, and pay-for-use databases.

Commercial activity on the Internet is currently continuing to grow, but this has not hurt the scientific, educational, and research networks, which are also growing. The Internet, which is a combination of NSFnet, ARPAnet, the

CIX, and about 10,000 other networks, will continue to grow and change, meeting the needs of the people who want to use it (Savetz, 1994).

The Internet: Growth and Population

Most of the world has some sort of access to the Internet. At last count, 146 countries had some type of connection to the Internet and 91 did not. Full Internet access is enjoyed by the United States, Canada, most of South America, Asia, and Europe (Savetz, 1994).

No one knows exactly how many people use the Internet, but according to some estimates more than 10 million people currently use it in some fashion. It is growing at an amazing rate. The original ARPAnet only connected four locations. By 1972, there were 40 sites connected to the ARPAnet. Today, the Internet encompasses more than 10,000 networks. By March of 1993, there were an estimated 2.1 million host computers on the Internet (Savetz, 1994). These belonged to educational institutions, commercial organizations, governments, the U.S. military, nonprofit organizations, and other unidentified organizations and networks.

No one "runs" the Internet. There is no single governing entity because the Internet was designed to be a decentralized mass of thousands of smaller networks. Its nature is anarchical. It is guided in its technical growth by several organizations loosely called the Internet technical groups. They attempt to structure the Internet while creating a minimum of restrictions.

The Internet: Functions

The Internet provides people with many different services. These range from tracking down information to communicating with one another to having a good time.

Communication

There are several ways that the Internet can be used by people to communicate directly with one another. One way is through electronic mail (e-mail). Any service that is part of the Internet can send and receive e-mail. It is a very fast way to send information, advertisements, spreadsheets, game programs, love letters, etc., more or less privately across the Internet (Savetz, 1994). The President of the United States is even using e-mail to receive and respond to messages from the public (Schwartz, 1994). Many companies have also been using an internal networking form of e-mail that is now often connected to the larger Internet. Some businesses have even begun to use e-mail as an advertising tool. The Internet mail system is the backbone (and the original motivation) for the network itself (Hahn & Stout, 1994).

People who want to trade opinions and information in a group forum can try Usenet. Usenet is analogous to the world's largest bulletin board where messages are posted and browsed. People can tap into different newsgroups on Usenet, which are organized by topic, and talk about almost anything. There are newsgroups on topics such as politics, science, movies, hobbies, fan clubs, and sexual orientations (Silberman, 1994), and if a person doesn't find a newsgroup

he or she wants to participate in, he or she can start one of his or her own. Usenet is a great tool for socializing with others, but it is also a tool used to exchange information while bypassing the standard forms of mass media.

A third method that people can use to communicate with each other directly over the Internet is the Internet Talk facility or Internet Relay Chat (IRC). The Talk facility establishes a connection between two computers. Users can use this connection to type back and forth with each other in real-time, rather than in the delayed fashion often found with e-mail and Usenet. They can hold a conversation with someone no matter how far away they are.

IRC is like the Talk facility, but it allows more that one person to participate at a time, much like a conference call. A person using IRC can take part in public conversations with a large number of people. These conversations are loosely organized around various topics or ideas.

Entertainment

People also use the Internet for entertainment. E-mail, newsgroups, and IRC are often used for socializing, but people can also play games with each other on the Internet. Chess, backgammon, Go, Chinese chess, Othello, bridge, strategy games, Internet Hunt, Internet Talk Radio, Usenet Oracle, comic strips, sex fantasies, and MUDing (multi-user dungeons) are all forms of entertainment on the Net (Savetz, 1994).

Information Gathering

There are many tools on the Internet that can be used to track down and access information. Telnet is a process that allows a user to establish a terminal session with a remote computer. A person can use Telnet to connect to a host on the other side of the world or right next door. Once the connection is made a user can log onto that computer in a regular manner (provided that he or she has a valid user account and password) and explore the information housed in that computer.

File Transfer Protocol (FTP) allows a user to transfer files from one computer to another. Downloading is the process where a user copies a file from a remote computer to his or her own computer. Uploading is when a user transfers a file from his or her computer to a remote computer. Some FTP sites require a user to get permission to download information, but on the Internet there are many "Anonymous" FTP sites where software is free to everyone.

A person can use this tool to access information from libraries (including the Library of Congress), news organizations (like Voice of America), and just about anything that is hooked into the Internet. There is even a direct link to the White House that allows a person to download speeches and press releases without going through the regular "gate keepers" of the press. A person can find information on the stock market, pictures from the space shuttle, and information about the government (through the Federal Information Exchange).

Throughout the Internet, there are a number of computers, called Archie Servers, that help users find the names of Anonymous FTP hosts that carry a particular file or directory. At regular intervals, special programs connect to every known Anonymous FTP host and download a full directory listing of all the public files. These lists are stored in an Internet Archives Database, and people can use Archie to access them. Archie was originally developed as a project by students and volunteer staff at the McGill University School of Computer Science in Montreal, Canada (Hahn & Stout, 1994).

Another search facility is called WAIS (Wide Area Information Service). In 1991, four large companies - Apple Computer, Thinking Machines Corporation, Dow Jones & Co., and KPMG Peat Marwick - created it (Engst, 1993). The original idea behind WAIS was that in a world of too much information, a computer could keep track of a vast amount of data, sift it for a user, and present him or her with only the information that is relevant to that user (Hahn & Stout, 1994).

WAIS is a program for searching large databases, lists, documents, and directories of files. Hundreds of WAISed information collections are available via the Internet, including everything from lists of Usenet newsgroups to scientific and government databases, to numerous books and lists. WAIS can also be used to provide search access to collections of audio, video, image, and multimedia information (Savetz, 1994).

Another search tool is Gopher. Gopher is a tool that provides a series of menus from which a user can access any

type of textual information, including that provided by other Internet resources. There are many Gopher systems around the Internet, each one administered locally. Each Gopher contains whatever information the local Gopher users have decided to share. While some Gophers are stand-alone systems, most of them are set up to connect with other Gophers (Hahn & Stout, 1994).

Gopher is designed for both browsing and searching for information, and it originated at the University of Minnesota, where it was intended to help distribute campus information to staff and students (Engst, 1993).

The most important adjunct to Gopher is a service called Veronica, which stands for Very Easy Rodent Oriented Internet-wide Computer Archive. Veronica is to Gopher what Archie is to FTP, a searching agent. It is a system that indexes the entire set of Gopher menu items. Jughead is a similar tool except that it searches only a confined area.

Although these tools are very useful they are not very user-friendly. The rapid growth of the Internet's user base of less technically oriented people has resulted in an increasing number of users who have neither the patience nor the desire to learn the intricacies of these interfaces. The World Wide Web was developed to help solve this problem.

Begun in 1991 by developers at the European Laboratory for Particle Physics (CERN) in Geneva, Switzerland, the World Wide Web (WWW) started as a way to organize and link related information, (later, client programs such as Lynx, Mosaic, and Netscape were developed to increase the WWW interface

with the Internet). This project made possible the idea of accessible and attractive interfaces on the Internet. Ideas within or across publications are connected by a series of hypertext links (or just "hyperlinks"). Users can traverse Internet documents by selecting highlighted items and thereby move to other, linked documents, and in the case of graphical displays they can see those documents complete with graphics and other multimedia elements (December & Randall, 1994).

People use the Web for many reasons. One reason is that it enhances the ability for users to gain information in a graphical format, information such as charts, diagrams, illustrations, tables, graphics, photographs, maps, and flowcharts.

A second reason people like it is that the Web increases the amount of research information that can be disseminated and located through the Internet. It can make research done by organizations timely, enjoyable, and interactive.

A third thing that users like about the Web is that it allows them to browse for and order products. This is home shopping at its most interactive (December & Randall, 1994).

A fourth attribute that users like about the Web is its use for client and customer support. Companies like Hewlett Packard and Digital Equipment Corporation are using the Web to make available to their customers such items as technical documents, software patches, and frequently asked questions. Customers with Web access can take care of their own information needs, resulting in less strain on the supplier's support staff and an improved reception of customer service

on the customer's part (December & Randall, 1994).

The fifth plus that the Web adds to the Internet is that, because of its graphical interface, it can and is being used to display the creative arts. There are galleries on the Web featuring new visual art as well as examples of creative writing. It offers artists an inexpensive way to mount their art for a built-in, global audience.

In the future the Web could possibly be used to perform many different functions, including full-scale publishing, voting, live interactive entertainment, news, distance education, and distance presentation. It is a popular feature for Internet users, who often mention that they "surf the Web."

The Internet: Access

There are several ways to access the Internet. Many governmental and educational institutions are hooked up, as are many companies and businesses. Some non-profit organizations are also connected. All these may seem free to the individual user, but someone (the school or company) is paying for the service and the equipment. There are a few places (like libraries) that offer "free-net" access to those who cannot afford it, but most people who do not belong to a group that offers access to members must pay for it themselves.

Compuserve, America Online, MCI Mail, GEnie, BIX, Prodigy, Delphi, and the Whole Earth 'Lectronic Link (WELL) are a few of the commercial online services that are available for a fee. Commercial online connections offer a

variety of other services besides Internet access, such as specific databases of information, games, and file libraries that are available only to their subscribers. They usually do not offer complete access to the Internet, and the amount of Net access varies with each program (Savetz, 1994).

The Internet can also be accessed through certain small networks called local bulletin board systems (BBSs). Most BBSs are not dedicated to providing Internet access; most of the time they have their own conference "rooms" for chatting and files for downloading, forums that act like newsgroups, and games shared by other subscribers. Those BBSs that do have Internet access provide Internet e-mail, and some have limited Usenet service.

Anyone (with the right equipment) can run a BBS. Some BBS operators charge for access and some do not. BBSs are generally much smaller than big commercial services like Compuserve, they are usually local and often have a theme.

What is Wrong with the Internet

The Internet is not a perfect entity. It can be hard to learn to use. There is too much information on the Internet, and despite tools like Gopher and the Web, it is still very disorganized. The hardware and connection fees are also often too expensive for many people to afford.

The Internet's chaotic, anarchic nature has also created several legal and ethical issues for the Internet community to face, such as slander, privacy, censorship, free speech, copyright, government tapping, pornography, libel, and commercial advertising. The Internet is also growing at such

a fast rate that the system is becoming bogged down and slow, and some access providers are becoming so swamped with new users that there is not enough room for them all to log on at the same time. Also, the group that assigns Internet address (personal identity code) is running out of them (Savetz, 1994).

Despite all of these problems, the Internet continues to grow in popularity. One of the purposes of this study is to find out why it has continued to grow, how, and what affect this growth has had on other communication technologies, on individuals, and possibly on society as a whole.

COMMUNICATIONS THEORY

This study was based on two theoretical concepts. The most important of these was uses and gratifications theory. It also used certain aspects of diffusion of innovations theory in order to define a set of terminology that made discussing Internet adoption more precise. These theories helped the researcher develop five research questions. These in turn affected the direction that the study took regarding participant interviews, data analysis, and the development of new knowledge of and predictions about the Internet.

Uses and Gratifications Theory

This study employed a qualitative research method that relied heavily on the participants' self-observation about their motivations and activities. The researcher assumed that Internet users knew their own needs and that they actively set out to meet them by using the Internet. This assumption was first bolstered by the fact that the nature of the

Internet is interactive, demanding that users not only seek out access and learn difficult techniques, but that they act as communicators as well as audiences.

This assumption was supported by the uses and gratifications theory of mass communications. Proponents of other communications theories have suggested that audience members are passive receivers who are helplessly affected by the messages that they consume from the mass media. Uses and gratifications theory, however, suggests that audiences are active and able to filter mass media messages, and that they can create their own responses to those messages (Bryant & Street, 1988).

Jennings Bryant and Richard L. Street, Jr. (1988) stated that today's message receivers have abundant message options and that they actively select from and act on these messages in such a way as to construct subjective meanings from them. They also believed that the active communicator's choice-making and meaning-construction are purposeful, strategic, and goal directed. As evidence, they cited the research accumulated by selective exposure scholars that finds that media message users act on informational and entertaining messages in ways that are psychologically valid and useful to them.

They also pointed to how the varied, choice-dominated nature of the new media demands an active audience. If a certain audience, like that of the Internet, must actively seek out a connection to a communications device, must often pay for it, must learn how to use numerous (often

complicated) machinery and tools in order to use it, and must act as communicator as well as receiver, that audience must be considered "active." Therefore, uses and gratifications, a theory that is based on the assumption that the audience is active and goal directed, was appropriate to use in a study of the Internet.

Uses and Gratifications: History

Uses and gratifications is concerned with what people do with the media, not what the media do to people (McQuail, 1969; Swanson, 1979). It developed out of a desire to redress the previous imbalance of research studies that focused on the effects of the persuasive aims of communicators on passive audiences (Katz, Blumler, & Gurevitch, 1974). It is based on the assumption that audience members have certain needs and that they are capable of knowingly choosing the medium and the content that will meet those needs (Gantz, 1980; Katz, Blumler, & Gurevitch, 1974).

During its early development in the 1940s and 1950s, the core emphasis of uses and gratifications studies was on insightful description of audience subgroup orientation to selected media content forms (Blumler & Katz, 1974). In their essay "Utilization of Mass Communications by the Individual," Katz, Blumler, and Gurevitch (1974) cited several such early studies, including the works of Lazarsfeld and Stanton (1942, 1944, 1949); Herzog (1942); Suchman (1942); Wolfe and Fiske (1949); and Berelson (1949).

What these early studies had in common was a basically similar methodological approach: Statements about media

functions were elicited from respondents in an open-ended way. Researchers would then group gratification statements into labeled categories, or typologies. These listed functions of either specific contents or specific mediums. This approach was mainly qualitative and results varied greatly among studies (Katz, Blumler, & Gurevitch, 1974).

During the late 1960s, the core of many studies switched to an operationalization of the social and psychological variables presumed to give rise to differentiated patterns of media consumption. These studies used more quantitative methods using broad surveys and statistical measures to determine general tendencies of audience members to seek certain satisfactions from the media (Blumler & Katz, 1974).

Typological studies formed the bulk of uses and gratifications research prior to the 1970s (Palmgreen, 1984). Early studies used the bifunctional view of audience concerns that included "immediate" and "deferred" gratifications and "information" and "entertainment" models. Katz, Blumler, and Gurevitch (1974) cited the studies of Schramm (1949), Pietila (1969), and Furu (1971) as examples of such work.

The four-functional interpretation of the media was first proposed by Lasswell, in 1948, on a macro-sociological level and developed by Wright, in 1960, on both the macro- and micro-sociological levels. It suggested that the media served the functions of surveillance, correlation. entertainment, and cultural transmission (or socialization) (Katz, Blumler, & Gurevitch, 1974).

In 1972, McQuail, Blumler, and Brown developed a

typology consisting of diversion, personal relationships, personal identity, and surveillance. It was later adapted by McQuail (1987) to consist of information, personal identity, integration and social interaction, and entertainment. Typologies are at the core of uses and gratifications research and continue even today to identify and classify motivations for media use (Palmgreen, 1984).

Uses and Gratifications: Criticisms

Criticisms of the uses and gratifications approach vary, and many of them were brought to light in the landmark book, The Uses of Mass Communications: Current Perspectives on Gratifications Research, by Jay G. Blumler and Elihu Katz (1974). Katz, Blumler, and Gurevitch wrote in one article from that volume that many uses and gratifications studies had still barely advanced beyond a sort of charting and profiling, and that hardly any substantial or theoretical effort had been devoted to connecting gratifications and effects. In fact, some feared that the notion of an active audience, which could freely and knowingly choose what media it wanted to consume, would threaten the entire theory of media effects itself.

Another criticism was that the word "active" had not been clearly defined. Neither had the word "needs" (Elliot, 1974). The approach seemed to suffer from the absence of a relevant theory of social and psychological needs that could be linked to media functions (Katz, Blumler, & Gurevitch, 1974). Elliot (1974) also claimed that the uses and gratifications method was "mentalistic" and

"individualistic."

Along with the lack of universally defined terms (Swanson, 1979b) as well as a lack of a relevant link to theory, uses and gratifications methods were also criticized. Many critics just could not bring themselves to believe that audience respondents could possibly know what their true needs were, nor could they differentiate between needs sought and needs actually gained. The researcher in such studies was also suspected of the bias of either developing subjective groups of gratifications from which respondents were to choose, or of subjectively grouping the open-ended statements of their subjects (Greenberg, 1974; Kline, Miller, & Morrison, 1974).

Additionally, many critics also pointed out that the individualistic nature of the studies made it difficult to compare them one to another and generalize as to the prevalence of the motivations in society (McLeod & Becker, 1974).

Uses and Gratifications Research: Continued Growth

Despite these criticisms, or perhaps due to them, research using the uses and gratifications approach improved and continued to grow. Blumler and Katz (1974) had predicted that the next path this method would follow would be to provide explanations of patterns within and between studies, and to link functions of mass media consumption to broader sociological and psychological needs. They described the uses and gratifications approach as one concerned with:

> (1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones. (p. 20)

Several studies in this landmark volume began to follow this new path, such as those by: Brown, Cramond, and Wild; Cazeneuve; Carey and Kreiling; Greenberg; Elliot; Johnstone; Kline, Miller, and Morrison; McLeod and Becker; McGuire; McQuail and Gurevitch; Mendelson; Peled and Katz; Rosengren; and Wright (1974). Kline, Miller, and Morrison studied the influence of the social system. McGuire's study focused on psychological motives. Rosengren suggested in his study that needs were both innate and affected by society.

Other studies have followed, and while description and measurement remain important concerns, a growing number of studies have indeed been dedicated to the specification and testing of hypotheses about gratifications and media consumption, the relationship between gratifications sought and obtained, the social and psychological origins of media use, and gratifications and media effects (Palmgreen, 1984). These studies varied widely in subject matter.

One of these newer studies was concerned with the gratifications of the household telephone (Dimmick, Sikand, & Patterson, 1994). This article reported on three studies of

gratifications obtained from the telephone. The first study consisted of open-ended qualitative interviews, and the second and third administered gratification questions to a random sample of participants.

What makes this study interesting is that the telephone is clearly an instrument used for interpersonal communication, yet it is also mediated. It is nearly universal in its diffusion and is widely considered a necessity of life. It has a major impact on American life, it fosters human interaction, and it helps to build and maintain communal life. Dimmick, et al. (1994) said that understanding the goals realized in interaction via the telephone will contribute to more comprehension of the role of the household telephone in communal life. Therefore, the purpose of the article was to study the goals realized in interaction or gratifications obtained from the telephone.

Dimmick et al. (1994) stated that a corollary reason for studying the gratifications of the household telephone was its role in electronic communication and its role as a forerunner of newer electronic forms of communication. Most users of the Internet use a modem to connect their computer with the telephone and dial into their server.

To support this claim, the researchers pointed to the Ball-Rokeach and Reardon (1988) article on telelogue communication, which maintained that the telephone is the ancestor of contemporary telelogic forms. Many varieties of electronic communal life are carried on through the phone infrastructure. They are extensions of interpersonal

communication, and may contribute to the cohesion and social integration of groups and collectives as well as to commerce (Dimmick et al., 1994). Hence a final reason for studying gratifications of the telephone was to understand more fully one of the older varieties of electronic communal life and, by so doing, provide theoretical and empirical linkages to the newer varieties.

Analysts in these studies concluded that there are three basic gratifications that users seek from the telephone: sociability, instrumentality, and reassurance. Whereas the reassurance factor is a psychological-level variable, the sociability factor is linked to the process of social integration and the instrumentality factor is tied to a social process called coordination (Dimmick et al., 1994).

It is the property of interactivity that unites the older medium of the telephone with the newer media of communal life. The telephone instrument is empty of content. Like the newer interactive media such as e-mail and bulletin boards, its uses must be created wholly by the user. The similarity of two of the household telephone gratification dimensions that emerged in this study - sociability and instrumentality - to dimensions of use of the newer media suggests an homophily of use between the older and newer interactive media (Dimmick et al., 1994).

Another study that implemented the uses and gratifications approach is "Gratification Models of Satisfaction and Choice of Communications Channels in Organizations," by Jean Dobos (1992). The purpose of the

study was to test the uses and gratifications framework as an explanatory principle of satisfaction and choice of various communications channels in an organizational context. The study concluded that media selection is guided, in part, by subjective evaluations of media performance. Potential users often based their decisions on the gratifications obtained in previous experience. Superiors and co-workers often provided valuable information about such media appraisals. The study also pointed out that some choices may reflect avoidance of a channel rather than satisfaction.

Dobos (1992) noted that the uses and gratifications perspective offers a theoretically relevant and heuristic framework for the study of traditional and electronic media in organizations. In particular, because it recognizes the importance of the social context as a factor in shaping the communications experience.

A third study that is useful to look at here is titled "Communication Research and New Media Technologies" (1983), by Frederick Williams and Ronald E. Rice. In this study the researchers introduced a quality which is called "social presence." In operational definition, it is reflected in how a participant in a communication exchange would fill in such semantic differential scales as "unsociable-sociable," "insensitive-sensitive," "cold-warm," and "impersonal-personal" (1983).

The point of citing this study was to notice that the new technologies are not, in an overall sense, inherently impersonal or personal. Their social presence is created by

the user. Therefore, in using the uses and gratifications approach, researchers should shift from concentrating on technology and content to the user's "environment." The environment sets the criteria for the value of information that users perceive when solving problems.

These studies are just a few examples of the many different ways the uses and gratifications approach can be used to study communication. Some researchers do not believe that uses and gratifications is a theory at all, but rather a research process. Blumler and Katz (1974) wrote that the uses and gratifications approach is a research strategy that can provide a home for a variety of hypotheses and specific communication phenomena and a testing ground for propositions about audience orientations stemming from more than one sociological or psychological theory.

Baran and Davis (1995) echoed this description, writing that uses and gratifications is not a highly coherent, systematic conceptual framework, but rather a loosely structured perspective through which a number of ideas and theories about media choice, consumption, and impact can be viewed.

Uses and gratifications is a theory and a research strategy. The theory is the idea that audiences are active participants in their media consumption and that they do know why they make the media choices that they make. The strategy is that, therefore, these audience members can be asked about their media use decisions and that their answers are valid enough to be used in research studies. Blumler (1979) wrote

that uses and gratifications has a mission: to come to grips with the nature of the audience experience itself, which is ever in danger of being ignored or misread by elitists or grand theoreticians.

Therefore, in terms of recent uses and gratifications work, although there has been an increase in "uses and effects" studies, most of the research has been devoted to explaining and explicating processes of individual mass media consumption. Several techniques have been used, including self-report, observer inference, and experimental manipulation. Self-report is the more commonly used method of the three. Through this method, typological studies have identified a great variety of motives for media consumption (Palmgreen, 1984).

There may be no better subject to look at through the uses and gratifications lens than the new communication technologies. Palmgreen (1984) stated that a major challenge that confronts uses and gratifications researchers is the adoption and molding of the current conceptual framework to deal with new communication techniques. Therefore, it was an appropriate theory with which to study the Internet.

The Diffusion of Innovations

Another theory used in this study of the Internet was diffusion of innovations. Much of the early work in explaining the diffusion of innovations was done by Everett M. Rogers in his book Diffusion of Innovation (1962) and in its second edition, Communication of Innovation: A Cross Cultural Approach (1971).

The first edition served to bring together diffusion of innovation studies from various disciplines such as anthropology, sociology, and education in order to compare their similarities and develop a working terminology and framework that could be used to describe the diffusion of any innovation or idea. The purpose of the second edition was to update this process with an eye to the impact it was having at the time on the diffusion of new ideas and technologies in Third World countries.

In 1983, Rogers published a third edition, Diffusion of Innovations, to update this theory. In it he redefined terminology, included criticisms, and discussed the consequences of innovation diffusion.

Usually, diffusion of innovations theory is used in quantitative studies which are designed to follow the diffusion of a certain innovation over a long period of time, statistically measuring adoption rates among adopter categories and generalizing the findings to predict the behavior of the society as a whole.

However, in this study the theory was merely used for its ability to define certain useful terms needed in order to discuss how a specific group of 20 participants first heard about and decided to use the Internet. This was a qualitative study with the purpose of exploring, in depth, how and why people are using the Internet and what effect it had on them and society in order to develop new knowledge and hypotheses about this technology, and the findings were not be generalized to the larger population.

Useful Terminology

An "innovation" is defined as an idea, practice, or object that is perceived as new by an individual or other unit of adoption (Rogers, 1983). At one time, the Internet was a new idea to each of the participants in this study. Therefore, it was referred to as an innovation.

"Diffusion" is defined as the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1983). The Internet has recently become more and more popular as time has passed and as more people have heard about and decided to try it. Therefore, it can be said that the Internet is being diffused through society.

One of the questions that diffusion of innovations terminology helped to illustrate concerned how people are finding out about the Internet. Rogers' (1983) definition of "communication channels" applied to this question. A communication channel is the means by which messages get from one individual to another. Communication channels can be mass media channels or interpersonal channels. Rogers stated that mass media channels are more effective in creating knowledge of innovations, whereas interpersonal channels are more effective in forming and changing attitudes toward the new idea, and thus influencing the decision to adopt or reject the new idea.

Another question that Rogers' (1983) terminology helped to discuss is why people decide to try the Internet and why they choose to keep using it. Here the terms "adoption" and

"innovation-decision process" were helpful in discussing the issue. Adoption is defined as the decision to make full use of an innovation. The question was stated as: why are people deciding to adopt the use of the Internet?

The innovation-decision process was defined by Rogers (1983) as the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision. These steps can be listed as: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 1983).

The term "knowledge" is discussed above in reference to communication channels. Participants in this study were also asked what "persuaded" them to try the Internet and what made them "decide" to adopt it.

Rogers (1983) stated that there are several characteristics that lead people to adopt or reject an innovation. One is "relative advantage," which refers to the degree to which an innovation is perceived as better than the ideas it superseded.

Another is "compatibility," the degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters.

A third factor is "complexity," the degree to which an innovation is perceived to be difficult to understand and use. The more complex an innovation, the slower it will diffuse.

A fourth element is "trialability." This is the degree to which an innovation may be experimented with on a limited basis.

The fifth factor is "observability," the degree to which the results of an innovation are visible to others. The researcher paid close attention to any patterns in the participant's decision making process that might mirror one or more of these five characteristics.

The question as to why the Internet has recently become so popular was studied by looking at the changes in the characteristics of the innovation itself by using the above terminology: Is the Internet getting easier to use, cheaper, etc.? It was also studied by looking at changes in the types of people who are adopting it.

Rogers (1983) defined innovativeness as the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system. The theory categorizes adopters into five groups: innovators, early adopters, early majority, late majority, and laggards. In this study these five categories were not employed because this was not a formal diffusion of innovations study. But the concept of "earlier" versus "later" adopters was used.

The term "consequences" means the changes that occur to an individual or to a social system as a result of the adoption or rejection of an innovation (Rogers, 1983). In the past, consequences have received little attention by researchers (Rogers, 1983). This is because researchers have

assumed that diffusion of innovations would automatically have a positive effect on a society. But they also have been ignored because the survey research methods usually employed in diffusion of innovations studies were inappropriate for investigating consequences, and because they are difficult to measure. Using a qualitative method, however, consequences can more easily be explored and examined, and they were explored in this study.

Criticisms of Diffusion of Innovations Theory

Rogers (1983) cited four major criticisms of diffusion of innovations theory. The first is that many of the studies using this approach contain a pro-innovation bias that suggests that all innovations should be adopted and that their diffusion should happen more rapidly.

A second criticism is the individual-blame bias, the tendency to hold an individual responsible for his or her problems, rather than the system itself. If an innovation does not get adopted researchers often blame the individual for not adopting it rather than the society for developing an innovation that is not useful enough to merit adoption.

The recall problem is a third element that diffusion researchers must deal with. Respondents may inaccurately recall the steps to their adoption of an innovation.

The fourth problem is the issue of equality. This refers to how the socioeconomic gaps among members of a social system are often widened as a result of the spread of new ideas.

Recent Studies in Diffusion

There are many recent studies that use the diffusion of innovations theory. Many of them have been done on the diffusion of western innovations in Third World countries. But there are also quite a few that have focused on the diffusion of new media (Papa, 1990; Schmitz & Fulk, 1991).

One such study, on collaborative mass media (where the audience acts as both the source and the receiver of the message), found that electronic bulletin board use entails a cluster of innovations, not a single innovation (Rafaeli & LaRose, 1993). The study found that one must first adopt home computer technology, then data communications, and then the behavior of searching bulletin board systems before one can adopt bulletin board use. This point is important to remember when looking at the adoption of other computer networks, such as the Internet.

"Diffusion and Social Impacts of Personal Computers," by William H. Dutton, Everett M. Rogers, and Suk-Ho Jun (1987) is another interesting study concerning the diffusion of innovations. It is a meta-research of past studies on personal computers in American households, and it examines factors related to the adoption of computing, how computers are used in households, and the social implications that extend from these patterns of adoption and use.

One reason that the study was important to the current study of the Internet was that the adoption and social impacts of home computers could be usefully compared with other communication technologies. The study's framework was

different from other studies like it because it distinguished between adoption of personal computing and patterns of use, to underscore the expectation that adoption will lead to a variety of usage patterns ranging from nonuse to heavy use of computing for a variety of purposes. Patterns of use, versus adoption per se, were viewed as the major determinants of the impact of computing on the home.

The researchers expected that the social status, personal attributes, and the socio-cultural setting of the users as well as the technical features of the hardware and software were expected to affect the adoption and use of computing and thereby its impacts in the home.

The social status of potential adopters/users was reflected by their income, occupation, and formal education. The study found relationships between adoption and education, income, or occupation that indicate an association between higher social status and the adoption of computing. Higher education was the strongest link of the three. This led to concerns about the possibility of inequity becoming a social impact. This may change, however, as the price of home computers goes down.

The personal characteristics of the innovation decision makers included their demographic characteristics (age and gender) and their immediate needs, beliefs, and attitudes toward computers. The study found that middle-aged individuals were not, however, well represented in the studies looked at. Men were slightly more apt to adopt than women in these studies. Also, adopters had greater interest

in, and more favorable attitudes toward, science and technology. Early adopters of home computers spent less time with television, in social activities, and in outdoor sports and recreation. They also slept less.

The social and cultural setting in which personal computing occurred included the social networks in which users were linked. The study found that owners of personal computers were more likely than others to use a computer at work and also to share their household with a child, particularly a child using a computer at school.

How a new idea is used was found to be an important factor in shaping the social impacts of a new technological invention. First, the study found that most computers were used regularly. Second, the hours per week of home computer use varied from an average of 6 to 17. Computing was used most frequently for work, word processing, education, entertainment, home budgeting, and learning about computing. At that time, they were seldom used for communication or household routines. The distribution of home computer use also was skewed, with a small proportion of heavy users and many light users. Dutton, et al. (1987), pointed out that this skewed distribution frequently characterizes the users of a new communication technology.

The study found a limited perspective on the social impacts of home computing as they are based largely on the reported perceptions of early adopters. Adopters believed that home computing had learning and educational impacts. It increased the amount of time studying and interest that

children had in schoolwork. Many adopters believed that their T.V. consumption had dropped, that they spent less time sleeping, devoted to outdoor sports and recreation, less time and interest in the arts, listening to the radio or reading books, and less time in social interaction.

The study indicated that nearly half of the adopters used home computing for work-related activities. Some felt it also increased the amount of time they spent working. Home computing also had affected home budgeting and accounting. Adopters were oriented more to their home and everyday home activities. Computing was also occasionally a source of conflict, as time spent alone decreased time spent with family and friends.

The study concluded that more research on home computer use was needed in order to better understand its social impact.

SUMMARY AND RESEARCH QUESTIONS

The purpose of this study, the purpose of all qualitative research, was not to generalize to a population or universe, but instead to generalize to theoretical predictions (Yin, 1994).

The first step in a qualitative study is to choose an intriguing topic worthy of investigation. Here, the researcher chose to study the Internet because it is part of the new interactive media which is changing the way people look at communication. The Internet combines the attributes of interpersonal and mass mediated communication, spawning the evolution of a new term: telelogue.

The Internet is over 20 years old, but has just recently become popular. It is a buzz word that is often heard in the media, at the workplace, in schools, and in homes.

People use the Internet for many purposes, including information gathering, communication, and entertainment. The ways that people use the Internet seem to be having an impact on their lives and their societies. It is affecting how they deal with news and information, how they socialize, and how they do business.

Qualitative research studies look at formal theory, concepts, and models from literature, and connect them to the phenomenon that is being studied (Marshall & Rossman, 1990). There were two theories explored in this chapter, uses and gratifications and diffusion of innovations. In a qualitative study, the literature review helps the researcher to frame certain research questions to be explored and answered. In this study five research questions devolved from the literature review.

Uses and gratifications theory states that audience members have certain needs and that they knowingly choose the medium and content that will meet those needs. Diffusion of innovations is a theory that suggests that there are certain patterns to the way that new ideas and innovations are diffused throughout a society. Past research has used both of these theories to study old and new communications technologies.

Communications research has a history of employing uses and gratifications theory to study communication technologies

by eliciting from respondents' statements about certain media functions in an open-ended way. For instance, uses and gratifications theory has been used to study the household telephone, categorizing the gratifications sought as sociability, instrumentality, and reassurance (Dimmick et al., 1994). The first research question in this study devolved from these past uses and gratifications studies and asked: How are people using the Internet?

The next research question was devolved from terminology from the diffusion of innovations theory. This theory suggests that people first gain knowledge about innovations through certain communications channels, either through mass media channels or through interpersonal channels. The second research question asked: How are people first gaining knowledge about the Internet, through mass media or through interpersonal contact?

Both uses and gratifications theory and diffusion of innovations theory have been used to study why people choose to adopt and use certain media. Diffusion of innovations studies have listed factors such as relative advantage, compatibility, complexity, trialability, and observability as influencing potential adopters in their decisions whether or not to adopt an innovation. For example, Rafaeli and LaRose (1993) found that adoption of BBSs required a previous adoption of home computers (compatibility).

One example that represents the uses and gratifications theory recognized the importance of social context in shaping the communications experience (Dobos, 1992). Another, the

Williams and Rice study (1983), also suggested that researchers should shift from concentrating on technology and content to the users' "environment." Therefore, studies using both of these theories helped frame the third research question: What factors shape why people are adopting and using the Internet?

Early criticisms of both uses and gratifications theory and diffusion of innovations theory led researchers to push for further research into the individual and societal effects of using certain media. Dimmick et al. (1994) studied the telephone's impact on American life. The Dutton, Rogers, and Jun (1987) study emphasized the social impacts of home computers. Ball-Rokeach and Reardon (1988) cited how interactive technologies were affecting the study of communication, and Rogers (1983) listed possible consequences of certain innovation diffusion. All of these led to research question number four: What effect does Internet use have on individuals and on society?

The fifth research question asked: As the Internet has become more popular, has there been a change in what type of users are adopting it and in how and why they are using the Internet? This question devolved from the previous four questions, as well as from the diffusion of innovations research that defines differing adopter categories. In this study, the categories were defined as earlier users and later users.

Again, the five research questions were:

(1) How are people using the Internet?

(2) How are people first gaining knowledge about the Internet, through mass media or through interpersonal contact?

(3) What factors shape why people are adopting and using the Internet?

(4) What effect does Internet use have on individuals and on society? and

(5) As the Internet has become more popular, has there been a change in what type of users are adopting it and in how and why they are using the Internet?

One important aspect about research questions is that they set boundaries on what will be studied. Here, they dictate the subject of Internet adoption, use, and effects. They were used to create a list of questions that the researcher asked participants during the in-depth interview. They also were compared to the study's findings in order to create new knowledge, predictions, and hypotheses about the Internet.

In addition, the way a research question is asked is extremely important because it determines the research method to be used (Strauss & Corbin, 1990). These research questions are broad and exploratory, attempting to gain the type of knowledge about the Internet that is not easily measured or quantified. They offer the flexibility and freedom to study the Internet in depth, with the outcome being the development of new, testable predictions and hypotheses. These research questions point to a study that uses qualitative research.

Chapter 3
Research Method

OVERVIEW

This was an exploratory qualitative study that probed how and why people use the Internet, why it recently has become so popular, and what effect it is having on individual lives and on society.

Qualitative research methods are particularly appropriate for exploratory studies that are attempting to understand new phenomena, such as the recent popularity of the Internet.

They collect and analyze data from observations of detailed descriptions of people's activities, behaviors, actions, and the full range of interpersonal interactions and organizational processes that are part of observable human experience.

Qualitative studies consist of three kinds of data collection techniques: (1) in-depth, open-ended interviews; (2) direct observation; and (3) written documents (Patton, 1990). This study used the first method, in-depth, open-ended interviews, in combination with daily log entries about Internet use that were kept by the participants.

Qualitative methods often have been used in combination with uses and gratifications theory to study communication technologies. Researchers have elicited responses to in-depth interview questions from media users, and typologies of use

often have been created from these responses (Katz, Blumler, & Gurevitch, 1974).

In-depth interviewing is a data collection technique relied on quite extensively by qualitative researchers (Marshall & Rossman, 1989). Interviews have particular strengths. An interview is a good way to get large amounts of data quickly. When more than one person is used as an informant, as was the case in this study, the interview process also allows for a wide variety of information and a large number of subjects.

A combination of data gathering techniques, such as log entries and in-depth interviews, allows the researcher to check descriptions against one another. This technique is called triangulation (Patton, 1990). In this study, the participants were asked to observe themselves by keeping a daily log of their Internet use for 10 days. They turned in this log every night. Keeping the logs gave them an opportunity to reflect upon their true Internet behavior. Their reports were later compared to the responses they gave to the interview questions. This triangulation, this act of bringing more than one source of data to bear on a single subject, strengthened the study's credibility and usefulness (Marshall & Rossman, 1989).

The interview technique does have some limitations. Cooperation is essential. Fortunately, the participants were self selected and eager to participate in every stage of this study, even offering follow-up information and extra thoughts they had after the interviews.

Another possible weakness of the interview technique is that the interviewer may not ask appropriate questions because of a lack of experience or familiarity with technical jargon (Marshall & Rossman, 1989). To avoid this, the researcher studied written material, gained expert advice and practiced using the Internet before holding the interviews.

The credibility of qualitative research has been criticized in the past for its lack of focus and description of design (Marshall & Rossman, 1989). In order to gain credibility, therefore, a qualitative study needs to include a clear focus and a detailed design that enumerates each step of the procedure and analysis.

This study included five levels of analysis. The first level of analysis involved choosing the 20 participants. The researcher paid close attention to what types of Internet users volunteered for the study and searched for patterns among them.

The second level of analysis involved comparing the log entries to the "use" interview questions for each participant, checking to see if the data sources agreed with each other. This added credibility to the findings.

The third level of analysis involved comparing the participants' interview responses to one another in a cross-case approach, looking for patterns in use, adoption, and effects.

The fourth level of analysis involved comparing the patterns to the five original research questions. The researcher then developed new knowledge, predictions, and

hypotheses about the Internet from these comparisons.

The fifth level of analysis involved using these new predictions about the Internet to suggest areas for future study.

These five levels of analysis demonstrate the study's clear focus and detailed design, which in turn created a credible research strategy. This strategy consisted of finding sources for data, collecting that data, and analyzing the data.

SOURCES OF DATA

The researcher used the Internet to locate volunteers to be in study. Messages were posted on several general, computer-related, and education-related newsgroups and forums on the Internet, on a commercial online service, and on a BBS. The message asked for volunteers to participate in a study on computer use.

The first level of analysis took place while the researcher was choosing participants. The researcher looked for patterns in the type of users who volunteered to be in the study. They were asked to fill out a questionnaire regarding their demographics (see Appendix A).

The researcher tried to choose the most diverse set of participants possible from the Internet users who volunteered. The obvious requirement for inclusion in the study was that each of them had to have access to the Internet. Another prerequisite was that they had to seem willing to participate for the duration of the study. The third criteria was that they needed to live in the San

Francisco Bay Area so that personal interviews could be conducted relatively easily.

There is an inherent weakness in using self-selected respondents (Patton, 1990), for they will not represent a random sample. However, this study is not proposing to generalize findings to the population, but instead to theoretical development and predictions. Therefore, it did not require a random sample. The strength of using self-chosen respondents was in the participants' willingness to participate in the study in a full and enthusiastic way. This helped with regular data collection.

COLLECTION OF DATA

Once the participants were chosen, two strategies for collecting data were used in this study: log entries and in-depth interviews.

Log Entries

The participants were asked to record their Internet use every day for 10 days and to send the log entries to the researcher via e-mail nightly. The participants preferred to send the information via e-mail rather than in person because it was more convenient. They were efficient and prompt in their record keeping and delivery. They were instructed not to count their daily log as Internet use. They wrote their logs in a narrative format, but used a list of prompts (see Appendix B) given to them at the beginning of the study by the researcher to keep them on track. They asked questions when they were not sure about how to categorize particular use, and they responded quickly to instruction from the

researcher, all via e-mail. The researcher printed out and read the sent log entries daily and analyzed them for patterns.

There are inherent dangers in using self-reported data to observe participant behavior. Respondents may forget what they did or may not understand why they used the Internet (Yin, 1994). To foster accurate recall the log entries were collected nightly, and this regular act of data entry caused the participants to pay closer attention to how they were using the Internet. This allowed them to think about and analyze for themselves why they used it.

Interviews

Once the log entries were completed, each participant met with the researcher for an hour long in-depth interview. The participants were asked open-ended questions which were derived from the five original research questions (see Appendix C). The interviews took place in libraries or at the participants' workplaces. They were tape recorded for accuracy and the tapes were later transcribed.

Typically, qualitative in-depth interviews are much more like conversations than surveys (Marshall & Rossman, 1989). The researcher asked general questions and allowed the participants to frame and structure their responses. In a uses and gratifications study, it is the participants' perspective on the social phenomenon that is of interest so their answers should be allowed to unfold as they view it (Marshall & Rossman, 1989) not as the researcher views it.

An unavoidable, "invisible" level of analysis of sorts

took place during the interviews themselves, since new variations on conversations evolved as the researcher learned more about the subject. Elliot G. Mishler, in his book Research Interviewing: Context and Narrative (1986), explains that, unlike a survey, a distinctive feature of this type of interviewing is that the answers given continually inform the evolving conversation, and that the questions (although somewhat standardized) involve neither neutrality nor objectivity.

As the conversations during these interviews varied in their direction according to the responses given by each separate participant, the respondents were allowed to be more searching, personal and deep in their responses (Mishler, 1986). In this way, the researcher allowed participants to drive the conversation into directions that were most important to them, therefore revealing their true uses and gratifications.

ANALYSIS OF DATA

Once the data was collected it was analyzed. First the researcher compared the daily log entries to the interview responses about Internet use, case by case. If the findings of the two data-collecting techniques agreed, then the findings themselves were more credible. This approach is called triangulation, the act of bringing more than one source of data to bear on a single point (Patton, 1990). This was the second level of analysis.

The third level of analysis involved comparing the participants' interview responses to one another, searching

for patterns in use, adoption, and effects, as well as keeping an eye out for unexpected patterns, which are the gem of qualitative studies.

The fourth level of analysis was to compare these patterns to the five original research questions, which were:

(1) How are people using the Internet?

(2) How are people first gaining knowledge about the Internet, through mass media or through interpersonal contact?

(3) What factors shape why people are adopting and using the Internet?

(4) What effect does Internet use have on individuals and on society? and

(5) As the Internet has become more popular, has there been a change in what type of users are adopting it and in how and why they are using the Internet?

From these comparisons the researcher developed new knowledge and predictions about the Internet. The fifth level of analysis was to develop a series of suggestions for future research.

Chapter Four
Findings and Discussion

OVERVIEW

This study employed five levels of analysis to develop new knowledge and predictions about the Internet. These levels involved:

(1) Choosing participants

(2) Comparing log entries to interview responses

(3) Comparing participants' responses to each other

(4) Comparing findings to the original research questions

(5) Developing suggestions for future research

FIRST LEVEL OF ANALYSIS:
CHOOSING PARTICIPANTS

The researcher posted messages on the Internet, on a commercial service provider, and on a BBS asking for volunteers to participate in a study on computer use. The first level of analysis involved choosing 20 participants from the original number of volunteers.

Forty people responded to the original message. They sent e-mail messages to the researcher asking for more information about the study. Thirty seven of the original 40 were male, only 3 were female. This discrepancy in gender could have been caused by several different factors. There may be very few women on the Internet, there may be only a few women who read the particular newsgroups that were

messaged, or women may be reluctant to respond to a study on the Internet.

Later in the study, participants were asked for their insight about this discrepancy. Both of the women that participated fully in this study answered that they were wary of giving personal information about themselves over the Internet and explained that such a practice is unsafe. They said that women on the Internet suffer a good deal of sexual harassment.

Several of the men who participated in the study also mentioned this existence of harassment toward females on the Internet. Some of the men gave examples of harassment that their women friends and family members had experienced. Some of the men had even felt it themselves while using female nicknames for themselves on the Internet. The existence of sexual harassment might account for the lack of female volunteers for this study.

Another explanation, that it was caused by a naturally low female to male ratio on the Internet to begin with, was also backed up by statements from the participants. Several participants estimated that only 10 percent of the users on the Internet were women, and that the study's participant make-up actually mirrored reality.

The subject of women on the Internet is an important one that should be looked at in more detail in future studies, especially since it may be in a process of change.

After the first volunteers messaged the researcher, they were each sent an e-mail message asking them to provide

additional data: the city they live in, the type of computer they used, how they were connected to the Internet (BBS, work, school, etc.), and the date when they first got access to the Internet.

Fewer than the original 40 respondents answered the second message. Those who did not respond to the message were dropped from the study, as were those who did not live in the San Francisco Bay Area.

Twenty final participants were chosen. The researcher picked users with diverse Internet histories and an eagerness to participate in the study. They were sent an e-mail message welcoming them to the study and explaining to them what they would be asked to do. They were also sent a series of prompts to assist them with the log entries.

Participant Characteristics

Next, the participants were sent, via e-mail, a short questionnaire to answer regarding their personal demographics (gender, age, race, etc.) The participants answered using letter choices so that their personal information would remain confidential. The use of interactive investigative technologies has been used in other research (Rogers, 1987) as have electronic surveys (Komsky, 1991), so the researcher incorporated some over-the-Internet data gathering techniques to simplify data collection and to increase speed.

The participants varied on personal demographics, but did not represent a random sample. All 40 original respondents were assigned a number in place of their names. Therefore, participants have numbers up to 39 even though 39

people did not fully participate. For a list of participant profiles see Appendix D. For a chart of participant demographics see Appendix E.

Patterns of Participants

Even though the respondents were not a random sample of the population of Internet users, they were somewhat diverse in their backgrounds and personal demographics and some patterns did emerge.

Ninety percent of the participants were male and 10 percent were female.

Seventy-five percent were white, 15 percent were Asian, 5 percent were part Asian and part white, and 5 percent were Hispanic.

Five percent of the participants had only a high school education, 25 percent had some college education, 35 percent had a bachelor's degree, and 35 percent had some post graduate education.

Five percent of the participants made less than $4,999 a year, 5 percent made $10,000 to $24,999 a year, 25 percent, made $25,000 to $49,999 a year, 55 percent made $50,000 to $99,999 a year, and 10 percent made over $100,000 a year.

Out of these 20 participants, 5 percent were 18 years old, 10 percent were in their 20s, 35 percent were in their 30s, 35 percent were in their 40s, 10 percent were in their 50s, and 5 percent were in their 60s.

Out of these 20 participants, 45 percent of them were married, 45 percent of them were not, and 10 percent of them were divorced. In addition, 40 percent of them had children.

Out of these 20 participants, 55 percent of them were connected to the Internet at both home and work, 10 percent were only connected at work, and 35 percent were only connected at home. Of those who had home connections, 25 percent used a BBS, 20 percent used Compuserve, 15 percent used America Online, and 45 percent used other paid accounts like Netcom. Ten percent were connected through college. (This adds to more than 100 percent because several of the participants used more than one account.)

In general, most of the participants were male, in their 30s or 40s, had a college education, and made more than $25,000 and less than $99,999 a year. About half of them were married and half of them were not. The most diverse aspect about them was how they accessed the Internet.

SECOND LEVEL OF ANALYSIS: COMPARING LOG ENTRIES TO INTERVIEW RESPONSES

The second level of analysis involved comparing each participant's log entries to their "use" interview responses. This case-by-case approach was used in order to check the two data finding techniques against one another.

A summary of the log entries, interview responses about use, and combined summaries are found in Appendix F. The results of this analysis found that the log entries did indeed mirror the interview-responses about use, and that the findings were in fact credible.

THIRD LEVEL OF ANALYSIS: COMPARING PARTICIPANTS' RESPONSES TO EACH OTHER

The third level of analysis involved a cross-case analysis of the data, comparing the participants to one another regarding the questions of use, adoption, and effects.

Patterns of Use

The first section that was looked at was Internet use, focusing on research question number one, "How are people using the Internet?"

Needs and Desires Override Demographics

What the researcher found was that these 20 participants used the Internet in very different ways and for different reasons. Even though the participants were relatively similar in many aspects (most of them were white, educated males, for instance), their use was very diverse.

For instance, participants #2, #4, and #33 were all white males in their 40s who made between $50,000 to $99,999 a year. However, participant #2 most frequently used newsgroups, followed by e-mail, usually for leisure purposes, but sometimes for work; participant #3 most frequently used e-mail, followed by newsgroups, always for leisure purposes; and participant #33 most frequently used a combination of functions, including e-mail, newsgroups, FTP, and WWW, for both business and leisure purposes, and he also used the Internet to buy and sell things.

Another example of how demographics did not seem to affect use was found when comparing participants #25 and #30.

They were both white males in their 40s who made more than $100,000 a year. However, participant #25 most frequently used e-mail and newsgroups, followed by some Telnet, FTP and WWW use, always for leisure purposes. Participant #30 only used e-mail, but for work and leisure purposes.

This same pattern, demographics not affecting use, showed up again and again as participants were compared to one another. These instances included comparisons of participants #10, #16, and #29, participants #7 and #24, and participants #5 and #22. Therefore, the study found that personal attributes such as age, gender, or race did not seem to have a direct affect on how the participants chose to use the Internet. Their decisions were based on their individual needs and desires, which were themselves very diverse. For instance, some of the participants said they used the Internet to substitute for letter writing or telephone use. Others used it for socializing. A few even used it as a substitute for newspapers, magazines, books, classified ads, or stores.

Functional Patterns

Although the participants used the Internet in very diverse ways, a pattern did emerge regarding the functions it served for them. The study found that people used the Internet to serve four basic functions: Communication with people at work, information gathering for work, communicating with people as a leisure activity, and information gathering as a leisure activity.

For example, 60 percent of these participants used the

Internet to communicate with people for work purposes. This communication took place primarily over e-mail, although some of it took place on newsgroups, Telneting, or FTP.

Fifty percent of these participants used the Internet to gather information for work purposes. To do this they used newsgroups, the World Wide Web, Telnet, FTP, or gopher.

Ninety percent of these participants used the Internet to communicate with people on a personal level, as a leisure activity. These messages took place on e-mail, newsgroups, IRC, Teleconferencing, or "Talk."

Eighty-five percent of these participants used the Internet for information gathering as a leisure activity. To do this they used newsgroups, the World Wide Web, Telnet, or FTP.

The Internet was found to be a communication technology with many different characteristics and tools within it. The participants who used it had to determine for themselves not only which tools to use (i.e. e-mail, newsgroups, FTP) but also for what function (communication, information gathering, etc.). This aspect of the Internet forced the users to behave as active participants in their communication exchange, not as passive audiences absorbing messages sent to them by the communicator. In fact, in most instances, the users took turns acting as both an audience and a message sender.

For instance, e-mail was always used as a communication device, but sometimes for work and business and sometimes for pleasure and leisure.

Newsgroups and forums were used as both communication

devices and as information gathering devices, depending on the needs of the individual user.

Teleconferencing, IRC, chat, and "Talk" were always used as communication devices, sometimes for work and more often for leisure and socializing. The World Wide Web was most often used as an information gathering device, for both work and leisure. Telneting and FTP were used both as communication devices and as information gathering devices.

Effects of Access Type on Usage

The study found that how a participant accessed the Internet did not necessarily have an effect on how he or she used the Internet. Some participants who had Internet access through work used the Internet for leisure activities, and some participants who had access at home used the Internet for work activities. The only thing that access did determine regarding use was that partial access through such things as BBSs or a commercial service did limit the choice of tools that a participant could use (i.e. some participants only had Internet access to e-mail).

To summarize, three patterns were found in this study to answer the research question about how people are using the Internet: The needs and desires of the participants were more important determinants of usage than were personal demographics; the participants used the Internet to fulfill four functions, communication for work, information gathering for work, communication as a leisure activity and information gathering as a leisure activity; and type of access did not affect what function the participants chose to have the

Internet play (i.e. work versus leisure), but in some instances it might have had the effect of limiting tool choice.

Analysis of Adoption:

Participants also were compared to one another regarding their responses about Internet adoption. Two of the study's research questions addressed this subject: How are people first gaining knowledge about the Internet, through mass media or through interpersonal contact?; and what factors shape why people are adopting and using the Internet?

Adoption: Communication Channels

The researcher looked for patterns concerning how people first gained knowledge of the Internet. The study found that all but three of the participants first heard about the ARPAnet or Internet through an interpersonal communication channel at work or at school or through a personal contact. Participants #2, #10, and #25 were the only ones who first found out about the Internet through the mass media, through magazines. For a breakdown of how each participant first heard about the Internet, see Appendix G.

The adoption process for all 20 of these Internet users was rather complex. The adopters gathered information through a combination of interpersonal and mass mediated sources throughout their decision making processes.

Although many of the participants in this study had heard of the Internet as far back as 1980, and some even earlier, most of them did not get access until years later. This gap between knowledge of the Internet and adoption of it

may have occurred for many reasons. One of the most interesting patterns that this study found about Internet users and adoption was what these people did during the interim.

Adoption: Previous Computer Use

Every single one of the 20 respondents had adopted computer use, either at home or at work or both, before they adopted Internet use. In fact, for some of them, lack of computer access is what stalled them in their Internet adoption process. For instance, participant #36 had heard about the Internet 10 years before he adopted it. He said, "In 1980 a friend of mine at Lockheed told me that he could call into NASA and get into ARPAnet . . . At that time I did not have a computer so I did not get on myself."

Adoption: Previous Networking Experience

Not only did these participants adopt computer use before they adopted the Internet, but they also adopted alternative forms of electronic computer networking communication before they adopted the Internet. These included such networks as BBSs, private service providers that were not connected to the Internet (like Compuserve), or proprietary (internal) company networks.

What this study found was that the participants adopted the idea of computer networking before they adopted the Internet itself.

Military

For instance, participants #19 and #33 first heard about ARPAnet at its inception in 1969 because they were working in

the military with separate computer networking technology and it was part of their job to be aware of the growth of the ARPAnet. After he retired from the military, participant #19 continued to work with internal networking at Lockheed, and even got introduced to BBSs through a friend who ran one in the early 1980s. He did not get Internet access, though, until 1990, through work. Participant #33 continued to work with computers for IBM after retiring from the service, but it was his interest in Ham radios that led him to hear about Compuserve in 1984. He got a Compuserve account in order to communicate with other Ham radio users. He finally got Internet access at work in 1987.

Commercial Services

Many of the participants in this study began their computer networking experience with Compuserve, a commercial networking service that only recently gained Internet access. Participant #3 started with a Compuserve account in 1985, but he didn't get Internet access until 1988 through his uncle's work account. Participant #4 started with Compuserve in 1989 and got Internet access when Compuserve hooked up to it in 1994. Participant #39 started with Compuserve in 1991 and got Internet access at work in 1993. Participant #25 started using Compuserve in 1979, moved to other BBSs in 1984 (as well as GEnie), tried AOL in 1988, and finally got Internet access in 1994.

Some of the participants in this study started out with other commercial services instead of Compuserve. Participants #5 and #18 began using computer networking on their families'

Prodigy accounts, in 1992 and 1991 respectively. They both moved on to BBSs, and finally got Internet access when their BBSs hooked up to it in 1994. Participant #10 started out with America Online in early 1994, and quickly moved to a paid commercial Internet account after the AOL bill came.

Bulletin Board Services

Many participants began computer networking by using local bulletin board services. Participant #7 started with BBSs in 1992 and later that year got on the Internet at work. Participant #16 started on a friend's BBS in 1984, moved to Compuserve in 1991 and got Internet access when Compuserve joined the Internet. Participant #22 started out with BBSs in 1992 and began to use Compuserve soon afterwards. She then got Internet access through both of them. Participant #24 started BBSing in 1984 and got Internet access at school in 1989. Participant #29 started with a BBS in the early 1980s, tried Compuserve in 1987, and got Internet access at work in 1989. Participant #30 got BBS access in 1990 and that BBS got Internet access in 1994.

Work

Several of the participants began their networking experiences at work with internal e-mail accounts, including #2, #14, #21, #32, and #36.

Therefore, virtually all of the participants in this study had some type of computer networking experience before they got Internet access. In some instances, the participants learned about BBSing or commercial services through the mass media and then about the Internet through interpersonal

contacts. For other participants, it was the other way around. Regardless of which way it went, the pattern was that the participants got to try computer networking before they adopted the Internet.

Further probing of this issue during the interviews found that many of the participants had a desire to adopt some type of computer networking but could not get access to the Internet itself.

Other participants said that they did not have a specific desire to adopt the Internet, but were just interested in the particular service that was readily available (like a BBS, a company network, or a service provider).

Adoption: Continued Interpersonal Communication

Seventeen out of 20 of the participants in this study first heard about the Internet through interpersonal channels. The researcher wanted to know if this trend might continue, so the participants were asked whether or not they had exposed anyone else to the Internet. Question #11 on the participant interview question list asked the participants if they had influenced anyone else in the adoption of the Internet. The study found that most of them had.

Family

Participant #3 convinced his sister and brother to get accounts and he bought an account for his parents and little brother in New York for Christmas. Participant #24 convinced his sister to get an account, and Participant #4 got his mother-in-law to join Prodigy. Participant #29 convinced his

sister in Sweden to find an account so they could keep in touch, and participant 22 got her son onto BBSs.

Other Personal Contacts

Other personal contacts also were influenced by the participants to adopt the Internet. Participant #2 convinced a woman at his church to join AOL because she was writing a book about women in the church and she needed a way to communicate with the authors of each chapter. She in turn influenced the different authors to get their own accounts so they could all exchange information. Participant #16 convinced several friends to get their own Compuserve accounts. Participant #18 hadn't influenced anyone to use the Internet, but he did introduce his ex-girlfriend and a another friend to a BBS.

Coworkers

Work is another area where communication about the Internet took place between these participants and future adopters. Five of the participants mentioned spreading the word at work, two of which (#19 and #25) had actually trained people to use the networks. Three other participants said they had talked about the Internet to people who were wondering and asking about it. Participant #33 took an exceptionally large amount of energy to expose people to the idea of the Internet, by pushing Internet use at work, teaching classes at work on how to use the Internet, teaching a class at the local community college on how to use the Internet, and working with the local public library to set up an Internet account. He also ran a small business that

offered Internet access.

Only three of the 20 participants said that they had not influenced anyone else in a decision to adopt the Internet.

Adoption: Participant Insights

The researcher also asked the participants to act as Internet experts, since they had spent a great deal of time using the technology and understood it from first-hand experience. They were asked to share their own insights as to why the Internet had recently become so popular. Their reasons fell into several different groups.

Mass Media

One reason given by many participants for the recent popularity of the Internet was Vice President Gore's well-publicized speeches about the "information superhighway" and the media exposure that the Internet got as a result.

Four participants mentioned Vice President Gore, six participants mentioned the "information superhighway," and 10 participants mentioned the media, newspapers, T.V., or general publicity. Participant #7 said, "Media. Media controls everything. Some people and companies have no idea why they are getting on to it." Participant #10 said it was, "more of a fad than a quest for knowledge," and participant #25 called the popularity of the Internet a "trendy thing." Participant #18 did distinguish what type of mass media when he answered, "I don't see a lot of media on the Internet except what the newspapers are printing in editorial," meaning that there had not been many actual commercials selling the Internet.

Previous Networking Experience

Some of the participants believed that getting a chance to try out networking on commercial services or BBSs before deciding to adopt the Internet was another reason for the recent popularity of the Internet.

The online commercial services seemed to be having an effect on Internet growth, according to these participants. Three participants mentioned that growth had been caused by the fact that online services like Compuserve, America Online, and Prodigy were now offering some Internet access and were making it accessible to a larger population. This meant that all of the previous commercial service users suddenly had Internet access, all at once. This could attribute to some of the growth in user numbers.

Also, the growth in commercial service use itself was cited as another reason. Participant #36 mentioned how much these companies were advertising lately for their services (offering free trials), and participant #3 mentioned how AOL had "started putting their disks in Mac-user magazines."

BBS popularity also was mentioned as a contributor to more Internet use. Participant #19 mentioned the "increasing numbers of BBSs," as a reason. Participant #22 said that BBSers were tired of the same old scene, having already met everyone in their local BBS community, and wanted to try something larger where they could reach more people. She said that the anonymity of the Internet made it attractive to some BBSers because, "If you think you're clever and you want other people to hear what you have to say, the Internet is a

huge audience, and they don't have to know who you are."

The growth of BBS use impacted Internet use in two ways. It introduced more new people to the concept of computer networking and also, as more BBSs got Internet access, it funneled large groups of network users onto the Internet all at once.

Home Computer Use

The huge increase in home computers also was cited as contributing to the growth in Internet use. Five participants mentioned that one reason for the recent popularity of the Internet was that more people had computers now, especially since the price of computers was dropping. Participant #32 said that, "Ten years ago not everyone had computers," and participant #30 said the recent popularity of the Internet was, "part of the computer revolution."

Company Use

Five participants mentioned that one reason for the general growth in Internet use was that large companies had begun to use the Internet to communicate with their separate sites, with each other, and with the public. Participant #16 said that, "The companies set the precedent to use it in business, and they teach their employees."

Some participants said that one reason companies had started to use the Internet was that there had been a shift in thought within the world of computers which made companies begin to value globalness over separateness. This shift in values allowed a technology like the Internet to enter the limelight. These companies have, in turn, exposed their

employees to the Internet in large numbers, increasing Internet use.

Participant #14 said, "Companies have adopted the Internet as a means of exchanging non-private corporate information. Therefore, they have invested in these large, expensive computers that are used on the Internet." He went on to explain that this was caused by a change in the late 1980s in the way companies were looking at open systems as opposed to closed, proprietary systems. He said, "That's probably a corporate paradigm shift," from making computer systems that only work separately from one another (like computers, printers, software) to computer parts and software that are interchangeable (Apple software working on IBM computers, etc.). Since the Internet already existed and was available to connect all these companies together, they decided to use it rather than develop a new system of protocols and programs.

Lower Cost

A reduction in the price of computer technology (modems and software and providers) also was cited by four participants as a reason for the recent increase in Internet use.

The reduction in software prices caused the software companies to stop offering 800 numbers for technical support. To save money they moved to newsgroup/forum support, according to participant #19.

Technical Improvements

Improvements in Internet technology itself, improvements in it's "user-friendliness," and the addition of the World Wide Web were suggested by six of the participants as other reasons for the Internet's recent growth. Participant #39 said that the Internet was, "Easier to browse through, more user-friendly," and participant #33 said, "The biggest thing is the tools are getting easier to use now, you don't have to know how to use Unix."

Critical Mass

Another reason for the recent growth described by participant #25 was that, "It is hitting critical mass, where enough people have it now so it makes it worth while to have it to communicate with people." Participant #14 also cited this point, saying, "Number one is the critical issue of connectivity, you have to have enough sites connected." Participant #19 said, "As more people use it, more people are forced to use it." And Participant #32 mentioned that, "The amount of information that is stored electronically now is greater than ever before," so the time has come that we can use something like the Internet.

Adoption: Summary

When asked for reasons for the Internet's recent popularity, the participants in this study came up with quite a few possibilities. They suggested that it was caused by an increase in coverage by the mass media due to Vice President Gore's remarks about the "information superhighway;" an increase in use of commercial on-line services (somewhat

caused by increased marketing of them), which have exposed people to computer networking; an increase in the number of commercial services and BBSs that have recently gained access to the Internet and had suddenly offered it to all of their users; an increase in home computer use; an increase in the number of companies that are offering service to their employees; a decrease in the cost of equipment and software; technical improvements that have made the Internet more "user friendly;" and the basic nature of critical mass, the more people that use this communication and information device, the more useful it becomes and the more people will benefit from joining it.

Effects of Use

One of the research questions of this study was about how the Internet was affecting the lives of individual users and also how the participants believed it was affecting society.

Effects: Individuals

First the participants were asked about how the Internet affected individual lives. Each participant was asked about which things the Internet might have acted as a substitute for. They came up with a variety of answers.

Television

The Internet did have many individual effects on the people that used it. Thirty percent of the participants claimed that it caused them to watch less television, and #16 said he still watched as much T.V., but used the Internet to supplement it in special cases, "like during the L.A.

earthquake," when he wanted to access information that the Television could not give him.

Telephone and Postal Mail

Sixty-five percent of the participants said that the Internet was acting as a substitute for the telephone, for business and personal activities. Seventy-five percent of them said that they now sent less letters via postal mail, but that their letter writing had increased overall because of e-mail.

Reading: Newspapers, Magazines, Books

Only 15 percent of the participants said that the Internet substituted for the newspaper, 15 percent said it reduced the time they spent reading magazines (mostly computer magazines), and participant #22 said it reduced the amount of time she spent reading paper back novels.

Advertising and Shopping

Thirty percent of the participants had placed ads on the Internet (in newsgroups) or had sold things like computer parts and synthesizers. Forty percent of the participants had purchased things that they found on the Internet, either from newsgroups or the World Wide Web. Participant #3 found a car to buy on the Internet, and other participants had bought software, computer parts, flowers, and other personal items.

Socializing

Many of the participants used the Internet as a substitute for in-person socializing. Sixty-five percent of them said they used the Internet for socializing. Participant #29 met a woman through the Internet who came to visit him

from Australia; participant #4 used the Internet to plan his Christmas family get-together, and participants #5 and #21 had both made "many new friends" over the Internet. Participant #3 found his roommate by using the Internet, and participant #22 found a cat to adopt.

Other Substitutions

Many of the participants also used the Internet to substitute for having to drive to a place to get something (because they found what they needed on the Internet), and several of them used it for archiving their activities at work and their correspondence or research at home.

Substitutes: Summary

The Internet did act as a substitute for a variety of activities in the lives of the participants who were in this study. It took the place of television, postal mail, the telephone, reading (newspapers, magazines, books), advertising, shopping, socializing, and other activities. The Internet played different roles for different individuals, based on their needs and desires.

Effects on Lives

The participants were also asked if the Internet had changed their lives in any significant way. Overall, the Internet had an effect on each of these participants' lives, some more than others.

For participants #3, #16, #29, and #39, the Internet had changed or affected their careers, in the area of computers or computer networking. Participants #2, #14, #21, and #30 said that their businesses improved because of the Internet.

Participants #3, #4, #16, #18, and #23 all said that the Internet had caused them to keep in better touch with friends and family, and participant #7 said that the Internet had turned him into a "recluse." Participants #18 and #24 both said that the Internet allowed them to talk with people on a deeper level than they would have in person.

Participant #10 said he spent less time with his wife because he spent so much time on the Internet. Overall, the participants claimed that they spent more time in front of their computers than they did before they got access to the Internet.

The Internet affected these participants' lives in a variety of ways. The most common way was that they spent more time in front of the computer than they did before the had access to the Internet. But other than that, the effect that the Internet had on each of the participants' lives was directly related to how the individual chose to use the technology.

Effects on Society

The participants were asked to give their insights about how the Internet was affecting and might affect society. Their responses showed several patterns.

Participant #2 summed up the thoughts of most of the other participants when he said. "So far, the Internet hasn't had a great effect on society. It's just starting to be felt by society." Participant #14 also said he didn't think the Internet had had an impact on society yet. Participant #19 agreed, saying it would take years for the Internet to have a

real impact on society.

Six of the participants, however, had noticed a change in society. Participant #3 noticed some changes, saying, "I see people becoming more reliant on it, in much the same way they became reliant on television." Participant #4 said he thought the Internet was affecting the way business was being done and participant #7 mentioned that the Internet had given rise to a whole new industry of providers with the spin-off of more advertisements and newspaper articles. Participant #5 thought the Internet had moved society from "paper to electronic media." Participant #33 said it was making society "more open" and participant #36 said there was more information available now due to the Internet.

Although not all of the participants agreed that the Internet had had an affect on society yet, they did all agree that it would someday have an impact.

These impacts ranged from democratizing society, to increasing the gap between the "haves" and the "have nots." Many of them mentioned the possibility that the Internet, with its keyboard dominated communication, might hurt interpersonal communication because of its inability to transfer body language and voice intonations, but they also believed that the Internet would eventually evolve into a technology with video and sound, so that these elements would add back the interpersonal cues.

To sum up, these participants did not think that the Internet had really changed society very much yet, but they did foresee many ways that it might change society in the

future. All of them agreed that the future of Internet effects on society depended on the direction of growth the Internet took, the changes in technology that took place, and who turned out to be the major players and controllers of the system. Most of them did foresee that the Internet, or a new version of it, would continue to grow and exist.

Internet: Concerns

The participants did have some concerns about the Internet. Many of them worried about security on the Internet, and one participant, #36, even had his credit card number stolen from a break-in at Netcom. Many users saw this security problem as the reason why there was not more commerce going on over the Internet. Many of them thought, though, that eventually the technologies of digital signatures and encryption, combined with the protection of anonymity through sheer numbers of users, would eventually make the Internet safer for commercial buying and selling.

Ironically, the other major concern that many participants had was that even though they wanted improved security, they did not want the government to step in and take control of the Internet. This feeling among participants was common enough to become a strong pattern in the study.

The Internet's culture has been based historically on anarchy, and the participants did not want to give that up. Even those participants who made a point to say that they had nothing to hide from the government did not want to give up the freedom of the Internet's anarchic nature.

Participant #19 summed up this sentiment when he said:

> I think that the benefits of free use of a technology that enhances free use will far outweigh the disadvantages that come from its use that way. And I think the case of Vietnam is a good example. Vietnam and North Korea could not allow their people Internet access. They can't have free information exchange. It is probably the same in China. I am not pro-machine guns, but it is the same idea as our right to bear arms, it is a way to tell government that there is no way that they are going to be able to get to the point where they can control the population.

Other participants had a few concerns besides security and government control. Several participants thought the Internet might increase the gap between the "haves" and the "have nots," although many of them thought the technology would become easy enough and cheap enough to use that everyone would eventually have access. Others worried that the Internet would become too commercialized. Both of the women in the study commented that they hoped people wouldn't become recluses "who never left their computer terminals" because it would "harm national health."

Netiquette and Adopter Categories

One of the unique strengths of qualitative studies is that they often shed light on issues and patterns that the investigator never imagined existed. This study did just that. The last research question asked, "As the Internet has become more popular, has there been a change in what types of

users are adopting it and why they are using the Internet?" The researcher's original reason for asking the question was to find out if there was a difference between older and newer adopters in terms of gender, race, age, education, etc.

When asked the question "How do new adopters differ from old adopters in personal attributes?" all of the participants answered that the newer adopters came from all walks of life, but that the older adopters were more "technical," "computer oriented," into "research" or in the "military."

But then they went on to talk about a completely unexpected subject. They described a conflict that was going on within Internet culture between the older users and the "newbies," or newer users. This conflict was over the issue of Internet etiquette, or "netiquette."

The problem seemed to be occurring mostly on the newsgroups, but it also occurred in IRC and Teleconferencing, and in rare instances, over e-mail. The conflict was mentioned so many times by so many participants that the researcher determined that it was one of the major findings of this study.

Participant #5 explained about the conflict by saying that the older adopters were "ticked off" at newer adopters because of "netiquette breaches." He said that the newer users had the attitude that Internet access was a "right." Older users, however, saw it as a privilege.

Participant #10 said that there was a definite difference between the people who had been on the Internet for a while and practiced "netiquette" and knew what they are

doing. He said that the older users had a "real impatience and intolerance" with the newer users. He said, "If the new people post something wrong to a newsgroup they are immediately flamed . . . there is some intolerance with . . . the newbiness."

Participant number 24 commented that there were some "social problems" on the Internet, "where people are rude or obnoxious or they don't want to follow the rules that everybody else does." He said that one of the rules is to, "kind of view the culture before you jump in." He added:

> There is a backlash right now against the new users because so many have come in and just started flooding newsgroups with messages that aren't correct or over-quoting text and filling it up with noise that wasn't there before and the old hacks are annoyed with it.

He suggested that people needed to learn proper etiquette and that perhaps the service providers should give training to the new users before they log on.

This conflict over "netiquette" was felt by participants in different ways. When asked what parts about the Internet that people did not like, many of them answered that it was this conflict, exacerbated by the anonymity of the Internet.

Participant #2 said that there were some things that he did not like about Usenet, one of which was the "relative anonymity." He said that the personal distance caused by the anonymity allowed people to say insulting things. He said,

"They get into fights over things that they wouldn't do face to face. That kind of just 'noise' just gets in the way." He also disliked the "ignorance" on the Internet, where "people don't know what they are talking about . . . that sort of deludes its value to me."

Participant #7 said he stayed away from IRC because of the "netiquette" problem, saying that he thought IRC was "stupid" because people did not stick to the specified topic and wandered off into personal conversations.

Participant #4 said that he disliked the "flaming" (rude comments) and "personal attacks' and "just general hostile behavior on the part of less than one percent of the population" and that because of this the only newsgroup postings he ever made were internal job postings. He said he didn't like the "flaming and the noise."

Participant #22, who rarely used the Internet because she didn't like it, said that what she finds when she scans Internet newsgroups is "just a lot of idiocy." She said that there was a lot of "flaming" and "totally unrelated gibber" and that it seemed that most people on the Internet were not her "kind of people." She said that there were a lot of "real snobs" on the Internet.

Participant #24 said that he disliked and was annoyed by "the occasional flame war." He commented that the reason there were "6,000 newsgroups on the Internet is because they focus on a specific topic" and that he does not like to see a newsgroup "where it gets so off-topic where people are screaming at each other." Then all the "technical discussion

you may be trying to get out of it is flooded out."

Participant #30 found that he did not like to scan forums on a BBS for the same reason, that "people get so personal in those things, 'I don't like the way you said that, stupid!' that kind of chatter."

Participant #32, who had been using BBSs and other networks for 15 years, was very upset about the changes that had occurred as the Internet had grown, saying that he did not find the newsgroups "worth bothering with." He said that in the old days the Internet population was made up of "strictly fairly educated people." He said that "people who talked about NASA knew a lot about it, now everybody, little kids, get on there and put anything they want on it." He said there were too many people and too much "noise." He wished there were separate levels on the Internet, one for the newer users and one for the older, technical users. He said that every society has "certain criteria" that needed to be met before a person could join it and he thinks this is a good idea for the Internet, too. Even though it is "elitist" he thinks there should be a "minimum requirement to post on newsgroups." He also added, though, that the idea of getting filtered information was "scary."

The above examples led the researcher to conclude that the Internet had developed its own culture over the years, its own set of rules and codes that helped organize an otherwise anarchic "society."

Not only did these rules and practices help to overcome the anarchy and disorganization of the Internet, but they

also helped users communicate more effectively with one another through an anonymous medium that lacked both body language and voice intonation cues.

The recent influx of new users began to change this previously structured culture. The new users were joining at such a rapid rate that the old culture could not absorb and mold them to fit in with the older users. There was no written code of "netiquette" for them to learn from and so they had no way of knowing what was expected of them until an older user explained it to them or "flamed" them.

At the time that this study was conducted Internet culture was in the middle of a battle between older and newer users for control over which direction the cyber society would go.

This conflict, caused by the recent surge in popularity of the Internet, as well as by the nature of Internet mediated communication, was one of the most important findings in this study because it was so strongly supported by the data and also because the researcher was absolutely unaware of its existence before designing and conducting the study.

Being aware of and understanding this conflict is very important because its outcome will determine, in part, what will become of the Internet. This, in turn, is important if the Internet ends up having a large impact on society, which many of the participants predicted will happen. What happens within cyberspace could have an effect on the larger society as well.

SUMMARY

This was a qualitative study using the log entries and in-depth interviews of 20 Internet users. It was designed to explore the nature of a new media technology, the Internet.

The purpose of this chapter was to display the findings of this qualitative study and to examine them for patterns in how and why people use the Internet, how they got involved with it, and how it affected their lives and their society. The first three levels of analysis took place during this chapter. The first level took place while the researcher was choosing participants. The most noticeable pattern found during this level was that most of the people who volunteered for the study were male.

Several reasons for this were explored, including sexual harassment on the Internet, lack of women on the Internet, or lack of women reading the particular newsgroups that messages were posted on.

The second level of analysis involved comparing the data from the log entries to data from the in-depth interviews regarding Internet use, in order to test the credibility of the data. This analysis found that the log entries did agree with the interview responses about Internet use.

The third level of analysis involved a cross-case comparison of participants to one another, concerning the responses they gave to the interview questions about Internet use, adoption, and effects.

The first thing that this level of analysis discovered was that participants used the Internet according to their

individual needs and desires, and not according to their gender, age, or income.

One pattern that was discovered about Internet use was that it could be cleanly divided into four functional categories: communication for work, information gathering for work, communication for leisure, and information gathering for leisure. Each of the participants used the Internet for one or more of these reasons.

The third level of analysis also involved comparing participants' answers about adoption. The study found that most of these participants first heard about the Internet through interpersonal communication rather than mass mediated communication. It found that all of the participants had adopted computer use before they adopted Internet use.

The study also found that all of the participants had adopted alternative forms of computer networking before they adopted the Internet. The participants had used BBSs, commercial services, or proprietary company networks before they used the Internet. This was one of the more important findings in this study.

Regarding effects, this study looked at how the Internet was affecting the individual lives of the participants and also how the participants believed that the Internet was affecting society as a whole.

The researcher found that the Internet affected the participants' lives in various ways. All of them spent more time in front of the computer due to their adoption of the Internet. For some, the Internet had affected their careers

or businesses. For others, it had affected their personal relationships.

For some of the participants the Internet acted as a substitute for the television, for others it was a substitute for the telephone, and for others it acted in place of the postal service.

As far as how the Internet was affecting society, most of the participants did not think it had yet. They all had predictions as to how it would affect society, though, and these were based on certain variables such as how the technology would grow and change and who the final decision makers regarding technology ownership turned out to be.

The participants had some concerns about the Internet, and two of the biggest were security and government control. The largest concern that these participants mentioned, though, was the existence of a conflict going on within the culture of the Internet between the older users and the newer users regarding Internet etiquette. This conflict was mentioned by almost every participant and was one of the most important findings of this study.

Chapter 5
Summary and Conclusions

OVERVIEW

This was a qualitative investigation of the Internet. Its purpose was to explore the recent increase in the popularity of the Internet, with an eye to how people used the Internet and why. Twenty Internet users were chosen to keep logs of their Internet use and to participate in in-depth interviews, and the data they produced was looked at through five levels of analysis which helped the researcher to better understand this new communications technology. The first three levels of analysis were discussed in the previous chapter. The last two are discussed in this chapter.

Five research questions, which were developed from past communication theory, helped to frame this study. Those questions were:

(1) How are people using the Internet?

(2) How are people first gaining knowledge about the Internet, through the mass media or through interpersonal contact?

(3) What factors shape why people are adopting and using the Internet?

(4) What effect does Internet use have on individuals and on society? and

(5) As the Internet has become more popular, has there been a change in what type of users are adopting it and in

how and why they are using the Internet?

The fourth level of analysis in this study was to compare the findings of the study to the five original research questions in order to develop new knowledge and predictions about the Internet.

HOW ARE PEOPLE USING THE INTERNET?

The study by Dutton, Rogers, and Jun (1987) found that adoption led to a variety of usage patterns ranging from nonuse to heavy use of computing for a variety of purposes. This study found the same thing. These 20 participants used the Internet in very different ways and for different reasons. Even though the participants shared common personal characteristics (for instance, most of them were white, educated males,) their use was still very diverse. This suggested that the Internet was flexible enough to meet many different needs and that use of the technology was determined by individual, active choices made by the users themselves.

The participants chose to use this new technology in many different ways. They used the Internet to substitute for letter writing, telephone use, and socializing, and they also (on a much lower scale) used the Internet to substitute for newspapers, magazines, books, classified ads, and stores.

The largest pattern that this study found regarding Internet use was that people used the Internet for four basic functions: communication with people at work, information gathering for work, communicating with people as a leisure activity, and information gathering as a leisure activity. Following the tradition of uses and gratifications studies,

these four functions were organized into a typology.

Early uses and gratifications studies shared a similar methodological approach: Statements about media functions were elicited from respondents in an open-ended way. Researchers would then group gratification statements into labeled categories, or typologies. These listed functions of either specific contents or specific mediums. This approach was mainly qualitative and results varied greatly among studies (Katz, Blumler, & Gurevitch, 1974).

Typological studies formed the bulk of uses and gratifications research prior to the 1970s (Palmgreen, 1984). The four-functional interpretation of the media was first proposed by Lasswell, in 1948, on a macro-sociological level and developed by Wright, in 1960, on both the macro- and micro-sociological levels. It suggested that the media served the functions of surveillance, correlation. entertainment, and cultural transmission (or socialization) (Katz, Blumler, & Gurevitch, 1974).

In 1972, McQuail, Blumler, and Brown developed a typology consisting of diversion, personal relationships, personal identity, and surveillance. It was later adapted by McQuail (1987), consisting of information, personal identity, integration and social interaction, and entertainment. Typologies are at the core of uses and gratifications research and continue even today to identify and classify motivations for media use (Palmgreen, 1984).

The patterns found in this study regarding use led the researcher to follow this tradition and create a typology of

Internet use. It was found that Internet use could be categorized into four groups: (1) Work communication; (2) Work information; (3) Leisure communication; and (4) Leisure information. Each participant in this study made choices to use the Internet that fit into one or more of these categories. The researcher proposed that other researchers who study Internet use will find that their results can also fit neatly into these four categories.

HOW ARE PEOPLE FIRST GAINING KNOWLEDGE ABOUT THE INTERNET: THROUGH THE MASS MEDIA OR THROUGH INTERPERSONAL CONTACT?

This study found that these particular participants first heard about the Internet through interpersonal channels.

When asked for their own opinions as to why the Internet had become so popular recently, many of the participants pointed to Vice President Gore's speeches about the "information superhighway" and the media coverage of his remarks. This suggested that the participants believed that recently people first heard about the Internet through the media.

The researcher suggests that this discrepancy between the two findings could be explained by noting that in the past there was relatively little to no media coverage about the Internet, so that those who did hear about it could only have done so through interpersonal contacts. Rogers (1983) suggests that this same pattern is common among the earliest adopters in his theory of diffusion of innovations.

The researcher predicts that Internet adoption will

follow Rogers (1983) theory of diffusion of innovations and that as media coverage of the Internet grows, more users will gain their first knowledge of the technology from it more than from interpersonal contacts.

WHAT FACTORS SHAPE WHY PEOPLE ARE ADOPTING AND USING THE INTERNET?

This study found that all of the participants had adopted computer use before they adopted Internet use. Previous studies also found that this is true of other computer networking technologies (Rafaeli & LaRose, 1993).

More importantly, though, this study found that these participants also first adopted alternative forms of electronic computer networking communication, such as BBSs, commercial services or internal company networks, before they adopted the Internet.

The researcher predicts that this pattern of previous networking experience will be found among other Internet users, but that as the Internet continues to grow, this occurrence will decline. The reason for this is that even though users will continue to enter the networking world through BBSs, commercial services, and company networks, these networks are now more and more often connected to the Internet, so that adoption of the Internet will occur simultaneously with that of the alternative networks.

When asked for reasons for the recent popularity of the Internet, the participants came up with many explanations. The researcher found that these explanations could be grouped into categories that were similar to a series of categories

developed by Rogers (1983) to describe innovation attributes that affect adoption

These categories described by Rogers (1983) are: relative advantage, compatibility, complexity, trialability, and observability.

"Trialability" is the degree to which an innovation may be experimented with on a limited basis (Rogers, 1983). Many of the participants suggested that one reason for the recent popularity of the Internet was that users could try networking at work, on a BBS, or on a commercial service before they decided to adopt the Internet.

"Compatibility" is the degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters (Rogers, 1983). The participants in this study all adopted computer use and computer networking before they adopted the Internet. They also adopted all of the values that go along with adopting these innovations. Therefore, they already held values about and had previous experience with technology that was similar to the Internet.

Also, it was suggested by the participants that a paradigm shift had occurred within the computer company industry that began to value global networking over proprietary networking. This shift in values created a climate where the Internet would fit in comfortably. Therefore, it was compatible with the values, experiences, and needs of the new adopters.

"Observability" is the degree to which the results of an

innovation are visible to others (Rogers, 1983). Many of the participants found out about the Internet and other networking systems from friends, family members, and coworkers who showed them how to use the technology. The adopters were able to observe how the technology was used and how it was useful, and this exposure helped them decide to adopt the technology.

"Relative advantage" refers to the degree to which an innovation is perceived as better than the ideas it superseded (Rogers, 1983). Many of the participants mentioned joining the Internet after using other networks because the Internet seemed like a better, more useful, and more enjoyable technology, because it let them reach more people than a BBS would, it did not have the censorship and controls that commercial services did, and it provided more functions (like games) than private internal company networks did.

Also, many of the participants mentioned that one reason for the recent popularity of the Internet was that it had improved as a technology and it offered new features like the World Wide Web that made it more attractive than older forms of networking.

The concept of relative advantage could also be connected to one participant's suggestion that the recent popularity of the Internet was caused by the natural phenomenon of "critical mass." The more people used the Internet, the more useful it became. For instance, if suddenly all of one's friends were using the Internet rather than the telephone to organize parties, having Internet

access would be more of an advantage than having telephone access.

"Complexity" is the degree to which an innovation is perceived to be difficult to understand and use (Rogers, 1983). The participants said that one of the most important changes that happened to the Internet recently was that it had become easier to use, more "user friendly." New user interfaces replaced the difficult Unix systems. Companies like Compuserve, America Online and Prodigy developed simple ways for their users to access the Internet. New technology was developed, such as faster modems, that made the Internet easier to use. New developments like the World Wide Web and Gopher made the Internet easier to navigate. Also, access to the Internet became cheaper, as did computer hardware and software, so that more people could afford to use it.

The findings suggest that these five characteristics were crucial to the decision making process of Internet users. The researcher predicted that these same characteristics would be found in other studies of Internet adoption as well.

WHAT EFFECT DOES THE INTERNET HAVE ON INDIVIDUALS AND WHAT EFFECT DO THE PARTICIPANTS BELIEVE IT WILL HAVE ON SOCIETY?

This study found that Internet use did affect the lives of the 20 participants. It changed their everyday behavior in different ways, from sitting in front of the computer more to writing more letters (e-mail) and staying in better contact with people, to using the Internet as a social outlet.

Previous studies found that patterns of use, versus

adoption per se, were viewed as the major determinants of the impact of computing in the home (Dutton, Rogers, & Jun, 1987). The same can be said of the Internet. The findings in this study suggest that the type and amount of effects that the Internet had on the lives of individual users was determined by how they used the Internet and how much time they spent using it.

The study did not attempt to determine how the Internet had affected society as a whole, but it did try to answer how these 20 participants felt that it was changing society. Most participants didn't think it had had a large effect on the world yet.

They did, however, anticipate that as the Internet grew in popularity it would begin to greatly affect society. The researcher hypothesized that this prediction by the participants would eventually come true: As the Internet grows and changes it will have a large effect on society.

However, the researcher also agreed with Ball-Rokeach and Reardon (1988) that although Internet use will continue to grow, older forms of communication like the telephone, television, or even newspapers, will not die out.

This study supports this hypothesis because the participants in this study did not stop using other forms of communication such as the newspaper, telephones, television, or even the postal service after adopting the Internet, nor did they really express a desire to stop using them. Many said that there were too many shortcomings with Internet computer communication. These include their remarks about

breaches in "netiquette." Most of the participants said they needed communication to be more personal than it currently was over the Internet.

Therefore, the researcher predicts that the older and newer technologies will eventually become more like one another rather than competing with one another. Newspapers will go on-line, Internet providers will advertise on television, and computer screens will eventually display full video and sound features.

AS THE INTERNET HAS BECOME MORE POPULAR, HAS THERE BEEN A CHANGE IN WHAT TYPE OF USERS ARE ADOPTING IT AND IN HOW AND WHY THEY ARE USING THE INTERNET?

This study found that the type of person who chose to adopt the Internet years ago was different from the type of person who had recently adopted it. The older adopter was more of a technical, computer-oriented person. The newer adopter was a person with a more diverse background, one who represented more of the general public. This finding came directly from the observations of the participants in this study.

One of the most interesting and unexpected findings of this study, however, was how this shift in adopter personality was affecting the Internet culture. The participants cited a great deal of conflict occurring as a result of the new popularity of the Internet. They used terms like "newbie," "flame wars," "netiquette" and "noise" to describe a culture that was definitely going through some changes.

The Internet was a cyber society that seemed to be going through "growing pains." It had developed its own culture, along with a code of ethics, that had developed during a time when access was limited to a select minority. This minority included certain sections of the population, people, usually men, who were technically or scientifically oriented, or who worked for the military, in research, or who were involved with an academic institution. They created a culture that fit their needs as well as the communication device that they were using.

The newer adopters came from much more diverse backgrounds and their reasons for being on the Internet were often much less specific. They did not know there was a code of ethics to follow. There was no handbook that listed the rules, and so they acted in ways that often upset the more seasoned group of users.

Many books have recently sprung up regarding the issue of "netiquette," so it is a topic that is popular even outside the range of these 20 participants. Participant #3 is actually in the process of writing such a book right now because he sees it as a major problem.

LIMITATIONS

This study used a combination of daily log entries and in-depth interviews to study 20 Internet users. The participants were elicited through postings on different newsgroups and forums requesting volunteers for a study about the Internet.

There are limitations to this type of study. One

limitation is that the participants are self-chosen. They had somewhat different backgrounds, but they did not represent a random sample. The findings could not, therefore, be statistically analyzed and generalized to the population as a whole.

By definition qualitative research produces findings not arrived at by means of statistical procedures or other means of quantification (Strauss & Corbin, 1990). The purpose of qualitative methods is to discover important questions, processes, and relationships, not to test them (Marshall & Rossman, 1989). Qualitative methods permit the evaluator to study selected issues in depth and detail (Patton, 1990).

Another limitation to this study is that it relied on the respondents' self report of their behavior and motivations. This self observation may be inaccurate because the participants might remember their activities incorrectly, may not understand why they do what they do, or may not tell the truth.

Separate data collection techniques (log entries and interview questions) helped to decrease this limitation, acting to check one another. This approach is called "triangulation," the act of bringing more than one source of data to bear on a single point. Designing a study in which more than one data gathering technique is used can greatly strengthen the study's usefulness for other settings (Patton, 1990).

In addition, the fact that these participants were enthusiastic volunteers who were eager to talk about the

Internet, as well as the fact that the questions asked were not overly personal, further decreased any doubts that the participants were telling the truth.

The quality of the study was improved by the participants' self-choice because each one of them was enthusiastic about participating and was therefore more conscientious about fulfilling the tasks asked of them.

Lastly, the Internet is a technology that demands active rather than passive participation from its users. It fosters a climate where users need to be aware of their motivations in order to use the Internet at all. This supported the researcher's assumption that the participants understood their own actions and motivations and could accurately share them with the researcher.

CONTRIBUTIONS TO LITERATURE AND DIRECTIONS FOR FUTURE RESEARCH

This was a qualitative study designed to explore the nature of the Internet, it's adoption, use and effects. The study found several patterns in these areas.

It is successful and important because it serves as an introduction to the Internet. It is significant because it contributed to literature, adding new information to uses and gratifications theory by creating a new typology of Internet use.

It also adds to diffusion of innovations theory by noting patterns in how adopters gain first knowledge about the Internet and how these participants went about their adoption process, including a very significant finding about

previous networking experience.

It also adds to communications theory because it suggests several impacts that using the Internet had on people's communication using behavior, (altering telephone, television, and postal service use) and it lays the groundwork for some interesting discoveries about how the Internet will eventually affect society.

The most exciting finding in this study is the conflict between older and newer adopters over breaches in "netiquette." This finding is both interesting and important because it suggests that the Internet developed a culture over the years of its growth, and that this culture is now under a major transition.

Understanding how this culture works could be valuable because it is unique. There may be a television culture, a radio culture, a newspaper culture, perhaps even a telephone culture. But are these other communications cultures defined by the users themselves, or by the industry that owns them? How alike or different is the nature of the Internet, with its interactivity and its anarchic tendencies, from any other communications technology?

These new questions can be used as springboards by future studies. The fifth, and final, level of analysis was to develop new research avenues from the information discovered in this study in order to suggest new research topics for other researchers to follow. These suggestions are to further study: women on the Internet; diffusion of the Internet; changes in the culture ("netiquette") of the

Internet; effects of the Internet on individual lives and on society; problems caused by the Internet (security versus control, etc.); and technical and ownership changes of the Internet. By further exploration in these areas, future studies could test some of the findings of this study.

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Appendices

Appendix A

Participant Demographics Questionnaire

1) Age

2) Gender

3) Race

4) Education -
   (a) High school graduate or below
   (b) some college or bachelor's degree
   (c) post graduate

5) Yearly Income
   (a) Less than $4,999
   (b) $5,000 - $9,999
   (c) $10,000 - $24,999
   (d) $25,000 - $49,999
   (e) $50,000 - $99,999
   (f) $100,000 or more

6) How are you connected with the Internet (work, school, etc.)?

7) Type of computer you use to access the Internet?

Appendix B

Log Entry Prompts

1) Did I use the Internet to e-mail anyone today?
   a) For business?
   b) For personal?
   c) to friends or family?
   d) local or far away?

2) Did I use the Internet to Telnet another computer?

3) Did I use FTP?

4) What types of files did I transfer (games, software, for work, or pleasure)?

5) Did I play a game in the Internet today? What?

6) Did I advertise over the Internet?

7) Did I engage in social teleconferencing or chatting?

8) Did I tap into a newsgroup or forum? Which one? Did I post or just read? Did I create a new one?

9) Did I do business using the Internet?

10) Did I help my kids study by using the Internet?

11) What else did I use the Internet for?

Appendix C

Participant Interview Questions

Part 1: Adoption

1) How did you first hear about the Internet?

2) Who first told you about it? (Work, friend, mass media?).

3) Why did you decide to adopt the use of the Internet?

4) How much time elapsed between when you first heard about the Internet and when you first adopted it?

5) Where did you go to find out more information about the Internet to make the decision to adopt? Who influenced you in your decision?

6) What aspects about the Internet made you want to adopt it?

7) What aspects about the Internet made you not want to adopt it?

8) When you first began to use the Internet, what did you do

on it?

9) What changes in your use have occurred since you first adopted it?

10) Have you ever discontinued use of the Internet for long periods of time? Why?

11) Have you ever exposed anyone else to the Internet, or influenced anyone else in their adoption of the Internet?

12) What do you think has caused the recent increase in adoption of the Internet?

13) How do you think new adoptors differ from old adoptors in personal attributes, social-cultural setting, social status, and in how they use the Internet?

Part 2: Use

14) How are you connected to the Internet? (BBS, school, work?)

15) What features are available to you?

16) What features do you like the most?

17) Which features do you not like?

18) What features do you use the most?

19) What features do you use the least?

20) Why do you use the Internet?

20a) (Go over diary entries and discuss trends, questions, etc.)

Part 3: Impact

21) How has using the Internet changed your every-day behavior?

22) What other activities have you used the Internet as a substitute for? (TV, letter writing, driving, phones, newspaper, magazines, singles bars, shopping in stores, classified ads, file cabinets for information storage, social gatherings, radio?)

23) Has the Internet changed your life? How?

24) Has the Internet affected your relationships? How?

25) Has the Internet affected your work? How?

26) How do you think the Internet has and will affect society?

27) What concerns do you have about the future of the Internet and its impact on society?

28) What changes would you like to see the Internet go through? Why?

Appendix D

Participant Profiles

Participant 2 -- A 42-year-old white male with some college education, but no degree. He was connected to the Internet at work and with an account at home. He uses a Sun SPARC10 at work and a 486 IBM computer with a 14.4k modem to a Portal account at home. He is married and has two sons, age 19 and 8. He lives in Cupertino and works in Mountain View. He is a software engineer who makes $50,000 to $99,999 a year.

Participant 3 -- A 21-year-old Chicano male with some college education (currently working to make money to return to school at Caltech). He is connected to the Internet through work at Sun Microsystems, through hold-over accounts at school, and through a Netcom account at home. He uses a Sun SPARC station 2 at work and an HP 700 at home and makes $25,000 to $49,000 a year. He is not married. He lives and works in Palo Alto and is majoring in physics at Caltech University.

Participant 4 -- A 43-year-old white male with a bachelors degree from Santa Clara University and a semester of post graduate schooling. He is connected through the Internet with a Compuserve account at home. He uses a P.C.

clone 486-33 computer. He is an ex-navy man who now works as an air traffic controller and makes $50,000 to $99,999 a year. He lives in Pleasanton, is married, and has a daughter who is a freshman at U.C. Davis.

Participant 5 -- An 18-year-old Chinese female attending U.C. Berkeley as a freshman. She makes less than $4,999 a year and lives in Berkeley and Fremont. She is connected to the Internet through a school account and through a BBS. She uses a 386 IBM compact at home and a Macintosh Centri or an IBM PS/2 at school. She is not married.

Participant 7 -- A 36-year-old white male with a bachelor's degree. He lives and works in San Jose. He is a technician and makes $25,000 to $49,999 a year. He is connected to the Internet at work and through a Netcom account at home and he uses an Amiga. He is not married.

Participant 10 -- A 32-year-old white male with some college education attending classes part time at a community college. He is a paramedic and lives and works in Pleasanton. He makes $50,000 to $99,999 a year. He is connected to the Internet through a CCnet account at home and uses a Macintosh SE. He is married and has two sons ages 9 and 12.

Participant 14 -- A 52-year-old white male with post graduate education. He graduated from San Jose State

University with a bachelor's degree in electrical engineering. He works for Hewlett Packard in Mountain View and makes $50,000 to $99,999 a year. He is connected to the Internet through work and uses an H.P. 9000/71/60 workstation at work and an H.P. Vectra P.C. at home. He lives in Sunnyvale, is married, and has three sons ages 19, 14, and 2.

Participant 16 -- A 34-year-old white male with a bachelor's degree. He lives in Dublin and works as a consultant at Hewlett Packard in Palo Alto. He makes $50,000 to $99,999 a year. He is connected to the Internet through work, and at home through a Compuserve account and uses an H.P. 9000 series 400 workstation at work and a Dell 386SL Laptop P.C. at home. He is divorced.

Participant 18 -- A 24-year-old white male with an associate degree who works as a technician for the city of Sunnyvale and is in the army reserves. He lives in Sunnyvale and makes $25,000 to $49,999 a year. He is connected to the Internet through a BBS at home and uses a 386DX-20 P.C. He is not married.

Participant 19 -- A 66-year-old white male with bachelor's degree from San Jose State University. He is a retired Lockheed employee and an ex-Air Force pilot. He makes $50,000 to $99,999 a year and lives in San Jose. He is connected to the Internet through work and through a personal Netcom account at home. He uses a P.C. Clone 486DX2/66 and is

using the OS-2 Warp 3 Internet access kit. He is married and has a grown daughter.

Participant 21 -- A 35-year-old Asian male. He has a post graduate degree and works at Tandem in Cupertino as a software developer. He makes $50,000 to $99,999 a year. He is connected to the Internet through work and at home with an America Online account and a Netcom account. He uses an Intel P.C. and a Unix Sun workstation. He is not married.

Participant 22 -- A 47-year-old white female. She has a high school degree and works part time at Safeway. She makes $10,000 to $24,000 a year and lives in San Jose. She is connected to the Internet through a BBS and Compuserve and uses a 286 AT with a 60mb HD with a 14.4k fax modem. She is divorced and has two sons ages 20 and 23.

Participant 24 -- A 30-year-old white male. He has a B.A. in chemistry from Santa Clara University with some graduate school work at Texas A&M. He works in Palo Alto and lives in Sunnyvale. He makes $25,000 to $49,999 a year and he is connected to the Internet through work. He uses a 486 P.C. He is not married.

Participant 25 -- A 48-year-old white male with a bachelor's degree in anthropology and a post graduate degree in information sciences. He works in San Francisco and lives in Berkeley and makes over $100,000 a year. He is connected

to the Internet through work, and at home with an ISP/PPP account and he uses a Macintosh at home and a P.C. clone at work. He is married and has two children ages eight and 10.

Participant 29 -- A 37-year-old white male with bachelor's degree. He lives and works at San Jose, he teaches networking, and makes $50,000 to $99,999 a year. He is connected to the Internet through a home Netcom account and he uses 386 based Intel computer. He was born in Sweden. He is not married.

Participant 30 -- A 42-year-old white male with a bachelor's degree. He works designing and fixing telephone installations and makes $100,000 or more a year. He is connected to the Internet through a BBS and uses an IBM compatible 486DX2/66 computer. He lives and works in San Jose. He is not married.

Participant 32 -- A 35-year-old Asian-Caucasian male with a bachelor's degree in Philosophy from Yale. He works as a computer consultant and makes $50,000 to $99,999 a year. He is connected to the Internet through work and a BBS and he uses a P.C. compatible computer, a Macintosh, and a Sun Sparc Station (Unix work station). He lives in San Jose and is not married.

Participant 33 -- A 46-year-old white male with a bachelor's degree in electrical engineering and some post

graduate work. He served in the army and now works at IBM making $50,000 to $99,999 a year. He is connected to the Internet at work and runs his own business that offers direct Internet access. He uses an IBM RS/6000 computer. He lives in Gilroy, is married, and has a 20 year old daughter.

Participant 36 -- A 50-year-old Chinese male who has a B.S. degree in Aerospace Engineering. He works at Lockheed and makes $50,000 to $99,999 a year. He is connected to the Internet at work and at home using a Netcom account. He uses a Next computer at home and a Macintosh or an H.P. computer at work. He lives in Sunnyvale and is married.

Participant 39 -- A 48-year-old white male with a post graduate degree. He previously worked for ABC News in New York and is now living in Mendicino where he is part of the ROP program where he is a video instructor. He makes $25,000 to $49,999 a year. He is connected to the Internet through Compuserve, America Online, and through work (at the high school where he teaches). He uses a Macintosh computer. He is married.

Appendix E: Particpant Demos

Participant	Gender	Race	Age	Education
#2	Male	White	42 years	some college
#3	Male	Chicano	21 years	some college
#4	Male	White	43 years	B.A.+
#5	Female	Asian	18 years	some college
#7	Male	White	36 years	B.A.
#10	Male	White	32 years	some college
#14	Male	White	52 years	B.A.+
#16	Male	White	34 years	B.A.
#18	Male	White	24 years	some college
#19	Male	White	66 years	B.A.
#21	Male	Asian	35 years	B.A.+
#22	Female	White	47 years	high school
#24	Male	White	30 years	B.A.+
#25	Male	White	48 years	B.A.+
#29	Male	White	37 years	B.A.
#30	Male	White	42 years	B.A.
#32	Male	White/Asian	35 years	B.A.
#33	Male	White	46 years	B.A.+
#36	Male	Asian	50 years	B.A.
#39	Male	White	48 years	B.A.+
Participant	Income	Marital Status	Children	Connection
#2	$50-99k	married	yes	work/home
#3	$25-49k	single	no	wrk/schl/hm
#4	$50-99k	married	yes	home
#5	<$5k	single	no	schl/home
#7	$25-49k	single	no	work/home
#10	$50-99k	married	yes	home
#14	$50-99k	married	yes	work
#16	$50-99k	divorced	no	work/home
#18	$25-49k	single	no	home
#19	$50-99k	married	yes	work/home
#21	$50-99k	single	no	work/home
#22	$10-24k	divorced	yes	home
#24	$25-49k	single	no	work
#25	>$100k	married	yes	work/home
#29	$50-99k	single	no	work/home
#30	>$100k	single	no	home
#32	$50-99k	single	no	work/home
#33	$50-99k	married	yes	work
#36	$50-99k	married	no	work/home
#39	$25-49k	married	no	work/home

Appendix F

Summaries of Use

Participant #2:

Log entry summary -- Most Internet use for participant number two was Usenet newsgroup use for work (EDIF information), news (to find out about the earthquake in Japan), and leisure (while his family watched T.V. and when his cold kept him awake at night). There was some e-mail use for work purposes. The Internet was used as a replacement for T.V. or other leisure activities, "I used the Internet for diversion and entertainment." Also, he used Netscape to browse the World Wide Web to locate a sequencer for work and to view a Celtic languages Web page for pleasure.

Interview summary -- He likes the Internet because it is a fun source of information ("I'm sort of an information junkie. I really enjoy reading things and learning about things, and this was just a vast library, or just pages and pages of newspaper"). He uses newsgroups the most ("I spend most of the time with Usenet news and I guess I like that the most, just for the entertainment value"), and he likes newsgroups that discuss subjects such as raising kids, computers and computer related subjects, music, and other subjects ("Specifically music related things, I'm into computers and music"). He also likes to just browse newsgroups to see what is out there. Newsgroups are his favorite feature of the Internet.

Combined findings -- This participant said in his interview that he liked Usenet newsgroups the most, and this statement was backed up by the log entries of Internet use that he kept for 10 days. He liked to use the Internet as an information source, and this is mostly a leisure activity, although there was some use for work. His log entries also mentioned some e-mail use for work and some World Wide Web browsing for leisure.

Participant #3

Log entry summary -- Most of participant number three's Internet use was e-mail, both work related and personal. This was followed by newsgroup reading and a little posting, and Telneting to his college account. He did a little game playing and used of the World Wide Web a little, as well as the Internet "Talk" function, and FTP.

Interview summary -- The function that he used the most is e-mail, for work ("Because of work I use e-mail all the time, I receive upwards of 30 messages a day") and for leisure (he uses it to keep in touch with friends long distance because "It was a lot cheaper than long distance"). He describes e-mail as "fun", "useful", and "convenient." He also likes to read newsgroups ("I also read a lot of newsgroups"). He also mentioned using Telnet to get into his college account, as well as the "Talk" function".

Combined summary -- Both the log entries and the interview point to e-mail as the function this participant uses the most, for work and for leisure. Both also point to a

good deal of Usenet news reading and a little Telnet and "Talk" use.

Participant #4

Log entry summary -- Use was personal e-mail to family members (daughter, mother-in-law, nephew, and cousin) and reading Compuserve forums and Internet newsgroups, a little every day.

Interview summary -- He uses the Internet mostly for e-mail ("For e-mail basically"). He originally started using it to keep in contact with his daughter when she went to college. He said that, "It seems like it is a lot easier than sending letters to the post office, it's nice to have that communication with people, just write quick notes and send them out on a daily basis, that's a lot easier to keep in touch, and you just naturally do it more frequently." He described the Internet as "cheap," "fast," "convenient," and always available (at any time). He also mentioned that he does read some Compuserve and Internet forums, mostly for pleasure.

Combined summary -- Both data samples suggest that this participant uses the Internet primarily for e-mail. This makes sense, since he only has a Compuserve account that does not offer full Internet access. He uses it to keep in touch with personal contacts. He reads some newsgroups for leisure.

Participant #5

Log entry summary -- This participant used ICB and BBS teleconferencing to chat with friends a great deal, as well as of e-mail with friends. She also did a good deal of newsgroup reading and some game playing. She did one search using a "finger" function. She mostly used the Internet for socializing and leisure activities.

Interview summary -- She likes the Internet because she sees it as the, "logical step from a BBS, it was a different way of meeting people." She thinks that people are the most important aspect about the Internet, and she says without them the Internet would just be a "giant fileserver." She enjoys and uses e-mail the most and says that it is the "easiest way for me to contact my friends, especially overseas." She also uses IRC to meet people and says that she has "met a lot of new people, even from here on campus."

Combined summary -- Both data strategies found that this participant likes and uses e-mail and IRC the most. She is into the way it allows her to meet and stay in contact with people, and uses it mainly as a leisure activity rather than for work of school work. She also has done some newsgroup reading and game playing.

Participant #7

Log entry summary -- This participant spent 30-60 minutes every day reading newsgroups about computers, outdoor sports, and news, he Telneted for a stock quote every week day, received and sent personal e-mail almost every day,

received an electronic magazine weekly, and occasionally browsed the World Wide Web. He used the Internet as a leisure activity, not for work.

Interview summary -- This participant mostly enjoys the newsgroups and free shareware that he can find by using FTP. He sees the Internet as "a big adventure." He likes exploring new places on the Internet, he thinks it is "fun" to see "what's out there." He also uses e-mail to keep in contact with friends, especially coworkers from old jobs. He uses it for leisure, not work.

Combined summary -- Both data sources show that this participant uses newsgroups the most, followed by e-mail and FTP. He has used Telnet, has browsed the World Wide Web, and also gets an electronic magazine. All of these activities are for leisure, not work, activities.

Participant #10

Log entry summary -- He spent an hour to five hours on non-work days chatting and socializing with people on IRC, sent and received social e-mail almost every day, and spent some time reading newsgroups and browsing the World Wide Web. He did a little FTPing and Telneting. All of his use was for socializing and leisure, there was no work related use (he is a paramedic).

Interview summary -- When asked what Internet function he uses and enjoys the most, this participant energetically answered, "IRC!". He uses IRC to chat with people as a leisure activity and describes his time as, "a

little mind vacation." He said that it is a "release" for him, it is "his time and the family knows it." His thing is to, "go off and interact with these people and I don't even know what they look like most of the time . . . it is just fun, the main reason I do it is just to kind of escape from reality for a while." He also said that he uses e-mail that he sends to, "people I have met since I've been on the Internet." He said that computers interest him as a hobby and that he uses the Internet for "social" reasons, not work. He also mentioned reading newsgroups, especially in search of sign language fonts to use while working with one of his sons, as well as reading other newsgroups for leisure activities.

Combined summary -- Both of these data gathering techniques found that this participant mainly uses the Internet for socializing and for leisure activities. He uses IRC extensively, as well as e-mail and newsgroups, and he has also used the World Wide Web a little. He sees the Internet as a "break" from reality and it has no relation to his work.

Participant #14

Log entry summary -- Most of participant number 14's Internet use was for work purposes: "Most of what I do on the Internet has to do with business." He used it to do e-mail transfers and to read forums and newsgroups. He also did some FTPing and Telneting, and he used the World Wide Web a few times. He said that the Internet allowed him to access work from home, as well as to travel to different work sites

during the day without having to drive to them.

Interview summary -- Participant number 14 said that he didn't adopt the Internet until, "my job needs required it." He said it, "appeared on my desk one day, it was useful for getting information." He said that he uses it as a "tool" and that he likes the "breadth of knowledge available" on it. It saves him from having to "travel to the corporate library or to the local libraries, or to call people even, I could search for information rather quickly and easily." He said that he uses the Internet 10-20% for hobbies and 80-90% for business." He said that he used e-mail the most, followed by newsgroups.

Combined summaries -- Both data gathering techniques found that participant number 14 used the Internet mostly for work purposes, usually for e-mail or newsgroups, with some use of FTP and Telnet. He also tried the World Wide Web as well. It cuts down on the amount of time he would have had to spend traveling to other company sites or to libraries looking for information.

Participant #16

Log entry summary -- Most of this participant's Internet use was sending and receiving business related e-mail every day, with some personal e-mail mixed in. He also read and posted on several Compuserve forums for business.

Interview summary -- This participant used the Internet primarily for business purposes. He has a consultant business, and he uses the Internet to make and keep business

contacts. He said that he uses the Internet, "for business reasons, trying to show whatever expertise our organization has." He also said he uses it as a "real low-level advertising." He said he uses the Internet to "exchange information and ideas" and that the function he uses the most is e-mail, followed by the newsgroups, especially one specific forum, the H.P. 2000 one."

Combined summary -- Both data gathering techniques found that participant number 16 used the Internet mostly for work purposes, with a small amount of personal use mixed in. He primarily used e-mail, as well as the newsgroups, to exchange information, to make business contacts, and to subtlety advertise his consulting business by showing his expertise on certain topics.

Participant #18

Log entry summary -- His use was all personal and leisure use, no business use. He accessed three BBSs, one of which has Internet access. He used the Internet a couple of times, but most of his use was internal e-mail and forums (newsgroups on a BBS). He spent time on e-mail, forums, teleconferencing with people, and playing games (Trade Wars). He is also a volunteer staff member of one of the BBSs.

Interview summary -- This participant only has partial Internet access through a BBS and he only uses the Internet, "once in a while, once a week, to send e-mail to friends who live out of town." He has never gotten a full access account because he, "never felt the need for anything

beyond e-mail." He likes the e-mail because "somehow it is easier than writing paper mail." Although he only uses the Internet for e-mail, he uses the BBS for other things, including a lot of chatting in Teleconference where he meets new people. He likes the "social" aspect of it, he is able to "talk to people without being nervous," he finds it "easier to communicate with people" through computer networking than in person. He does not use the Internet for work.

Combined summary -- Both data gathering techniques found that this participant only used the Internet for e-mail, but used BBSs for other activities like chatting, games, and forums. He used them as a leisure activity for meeting and socializing with people, and he did not use it for work.

Participant #19

Log entry summary -- He used the Internet to do some business (he is retired but does some telecommuting), but most of his Internet use is for personal reasons. He is interested in computers, especially in the new OS/2 operating system, as a hobby and spends a great deal of Internet time reading about OS/2 and transferring the information he finds to others. He does a good deal of e-mailing, some long distance (like his old sweetheart), but mostly with local friends. Some e-mail is used like a "chat" function where both parties are on line at the same time. This function is for socializing with others. He doesn't like the real "chat" function because he doesn't type fast enough. He also uses

the World Wide Web on a regular basis for news gathering from the San Jose Mercury News that has a Web site there. He used the Internet mostly for leisure activities, with a little work thrown in.

Interview summary -- This participant used the Internet for the "two threads" in his life that have to do with computing: "One of them is my profession and the other one is as a way to communicate with people and to communicate information from a hobby standpoint." He said that he is "one of those people in that my business is my hobby." He is retired now and only used the Internet a little to do some part time work telecommuting. As a leisure activity, he used the Internet to contact and socialize with people, to read newsgroups, and to write a newsletter that he puts out on the Internet called 'OS/2 Rumorville.'" He said he liked e-mail, newsgroups, and FTP the most, and that he used e-mail the most. He said he didn't like to write letters and that he "liked the interactivity of e-mail versus letter writing." He finds it an important way to stay in contact with people, even those who are close enough to call on the phone, and that he and his friends often use the Internet to exchange bits of humor, "kidding each other, it is a lot of fun."

Combined summary -- Both data gathering techniques found that participant number 19 mostly used the Internet for leisure purposes. He is retired, but still used the Internet for a little part time telecommuting to his company. He mostly used e-mail to contact and socialize with friends, and he also read newsgroups and regularly posted an OS/2

newsletter on one. He also used the World Wide Web to get information from the San Jose Mercury Newspaper.

Participant #21

Log entry summary -- This participant used most of the functions of the Internet. He used e-mail extensively for work and for pleasure. Many (80 percent) of his friends have e-mail addresses, so he was able to use it to contact them for social purposes. He also read and posted to newsgroups for pleasure as well as for business. He even posted to a newsgroups in order to sell his CD-ROM drive. He used FTP and Telnet for work, and he surfed the World Wide Web for business and pleasure. He even used his America Online account to chat with people in Teleconference. He did not spend time playing any games, although he expressed the wish that he could find time to do so.

Interview summary -- This participant used the Internet for work and for leisure. He said his use is "work related" and that he "must have Internet access in order to survive in order to obtain enough information to perform my job." He said his home account was "more for entertainment and for keeping up with trends." He said that his Internet use was helpful in his career development as well, "improving my skills." He said that he used e-mail, newsgroups, and the World Wide Web the most, that it "all varies," and that he liked the Web the best.

Combined summary -- Both data gathering techniques found that participant number 21 used the Internet for work

and for leisure. He used most of the options available on the Internet, and used e-mail, newsgroups and the World Wide Web extensively, as well as FTP, Telnet, and chat. He tried to sell his CD-ROM drive on the Internet, and used the Internet to increase his career skills.

Participant #22

Log entry summary -- She does not like to use the Internet, but she does use a BBS for games, internal e-mail, and teleconferencing. She does download games from another BBS to use at home on her own computer. She does not use the Internet, or BBS, for work.

Interview summary -- This participant does not use the Internet "because I have no use for it." Most of her computer networking needs are met by her BBSs and Compuserve accounts. She liked the local feel to the BBS, she liked to teleconference with a small group of people, most of whom she has met in person. She also used internal e-mail, and she liked to download files of software from BBSs. When she does use the Internet, which is seldom, she uses it for e-mail, and she liked "the idea of being able to connect to someone who wasn't on my BBS." She did not use either the Internet or the BBSs for work, only for leisure and socializing.

Combined summary -- Both data gathering techniques found that participant number 22 does not like the Internet nor does she often use it. When she does, she uses e-mail. She did use her BBS accounts, for teleconferencing, forums,and downloading software. She did not use either the

Internet or the BBSs for work, she used them for leisure and socializing.

Participant #24

Log entry summary -- He used e-mail extensively for personal messages. He also did a lot of FTP to different sites, mostly leisure and hobby oriented, and to read news. He also frequented the World Wide Web. He also read Usenet newsgroups on a regular basis on computer subjects. He used the Internet to read newspapers and magazines.

Interview summary -- This participant used the Internet mostly as a leisure activity to communicate with friends and to continue his hobby with computers. He used E-mail and FTP the most often, to communicate with friends and "for getting program updates," and he used "Telnet every once in a while." He liked the Internet because it is a "more widely connected network" than the BBSs he was previously connected to. He said that he has "always been rather shy" and that he liked the Internet because he could "ask questions and get help on his P.C. configuration or getting a piece of software to work properly" without having to meet with someone in person. He said, " The nice thing is that it's not really intrusive, I don't like to call people up o the phone and I don't like to call tech support and things like that." He said that e-mail is more "convenient for those people because they can answer it when it is convenient for them. It's not like a telephone where you have to pick it up and deal with the person right now. Or feel sort of an

obligation with the answering machine to call somebody back right away. With e-mail you can let it sit." He has also purchased things from the World Wide Web (like flowers from Hawaii for Valentine's day), bypassing the human interaction "without having somebody in my face." He has also read the newspaper on the Web.

Combined summary -- Both data gathering techniques found that participant number 24 used the Internet primarily as a leisure activity, to communicate with people, friends, and to gather information about his hobby, computers. He used e-mail, FTP, and occasionally Telnet, as well as the World Wide Web to purchase things and to read the newspaper.

Participant #25.

Log entry summary -- He used e-mail for personal use almost every day. He also used it to communicate to the city council and to volunteer with the public library. He used Telnet to get mail from another computer, and he used FTP quite regularly to check sites and to download files. He read and posted on Usenet newsgroups that were about kids, computers, and the Internet, specifically to look for information on ISDN lines. He also surfed the World Wide Web and used it to explore the public library and the city of Berkeley. He did not use the Internet at all either weekend.

Interview summary -- This participant used the Internet primarily as a leisure activity, "as an extension of my hobby -- computers." He liked it for its "instant access to information and newsgroups," and he also said he liked to

"post private e-mail." He mentioned that he also used the Internet to continue with an earlier interest in civic organizations, it allowed him to do things like "Telnet to get a full bill that is in the legislature" and to "send a note to a politician." He did not use the Internet much for work purposes.

Combined summary -- He used the Internet as a leisure activity to continue with his hobby in computers, and to a smaller extent, to continue with his interest in civic and political organizations. He used e-mail regularly, and liked the newsgroups quite a bit. He also used Telnet, FTP, and the World Wide Web. He did not use the Internet for work.

Participant #29

Log entry summary -- He used e-mail and read and posted to Usenet newsgroups every day, some for personal reasons, but mostly for business. He is looking for a new job, and used the Internet to help with that. He also used Telnet and FTP occasionally. He used the World Wide Web once to find out information about Malaysia and used the Talk function with a friend once for business information. Most of his Internet use was for business.

Interview summary -- This participant used the Internet primarily for work purposes, although it is hard to separate work from leisure here because "my hobbies are the same as my jobs." He works "teaching about networking technologies" and he used the Internet "for the company and for enhancing my own sale ability, gaining more skills within

my own field of expertise." He did use the Internet some for "entertainment" and he did do some personal e-mail exchange, especially with his sister in Sweden. He liked the Internet's "free access to almost any information" and it's "free exchange between people." He used e-mail, Usenet newsgroups, and FTP the most, and "recently the World Wide Web, which is just a pretty way for me to get the same information I was getting through FTP."

Combined Summary -- Both data gathering techniques found that participant number 29 used the Internet primarily for work, although his hobbies were the same as his work. He used e-mail, Usenet, FTP, and the World Wide Web in order to communicate with people and to gather more information about his field of expertise, which is computers and networking technologies.

Participant #30

Log entry summary -- This participant's access to the Internet was only through a BBS that offered partial access, so he only used the Internet for e-mail, both for personal contacts and for business contacts. He did receive an unwanted chain letter from someone on the Internet.

Interview summary -- This participant used the Internet "mostly to keep in touch with people across the country." He said he used it for e-mail, to beat the postal service, which he called "snail mail." He said the Internet made it "real easy to keep in touch with people across the country. Instead of sending an envelop with a letter in it

that will take up to a week to get there, or might not even get there," the Internet's "fifteen minutes to six hours" is faster. He used it to keep in touch with business contacts and personal friends. On the BBS, he also chatted with people in Teleconference and read a few forums.

Combined summary -- Both data gathering techniques found that participant number 30 used the Internet for both work and leisure, and that he used it only for e-mail, which he liked for it's speed and efficiency.

Participant #32

Log entry summary -- This participant used the Internet for daily e-mail for both business and personal. He was also able to use the Internet to do work at home by downloading files from work. On a local BBS he also played games often, read and posted to BBS forums, and spent a good deal of time chatting with people on Teleconference. Internet use was split between business and personal, but BBS use was only for leisure and socializing with people.

Interview summary -- This participant mostly used "e-mail" on the Internet, to communicate for work and to communicate with friends. He said it is a "convenience more than anything else." He liked it because it is "free, and really fast, it was a way to disseminate information." He found computers "fascinating," so it is a hobby as well as a job. He also used the BBS for game playing ("Trade Wars") and for chatting with people and reading and posting to the poetry forum. His use was for business and pleasure.

Combined summary -- Both data gathering techniques found that participant number 32 used the Internet primarily for e-mail, both business and personal. He also used the BBS for chatting with people, playing games, and forums.

Participant #33

Log entry summary -- He used e-mail every day, for both personal and business. He also scanned the same 51 newsgroups for business and pleasure every day. Every day he used Telnet to monitor his Internet computer from home. He ran an Internet side business to provide Internet access to people and much of the mail and newsgroup activity helped with this. He advertised about his side business on the Internet and very frequently received requests for information about it through the Internet. He periodically used FTP to get new files, and he browsed the World Wide Web. He installed robot software onto his computer over the Internet. He's helped people find Internet services using the Internet, he has searched for song lyrics, and he has looked up an FCC ruling on the World Wide Web. He has also browsed the Internet to look at companies that sell things.

Interview summary -- This participant used the Internet for both work and leisure. He liked it for its "ease of communication with people who are in the same field." He said that using the Internet "saves me time and energy and it increases my knowledge." He said he used e-mail, newsgroups, and the World Wide Web the most. He used the Web to shop for equipment for work. Not only did he use the Internet to help

with his job at IBM, but he also ran a "side" business of providing Internet access for clients who paid him and his partner. He liked the aspect of being able to "determine the time" when he wanted to communicate rather than needing another person ready to communicate with him.

Combined summary -- Both data gathering techniques found that participant number 33 used the Internet for both work and leisure. He used e-mail, newsgroups, FTP and the World Wide Web to communicate with personal and business contacts and to access information for business and for pleasure. He used the Internet to advertise his side business as well as to purchase equipment needed for work.

Participant #36

Log entry summary -- He used e-mail on a regular basis for business and for pleasure. He spent large chunks of time reading Usenet newsgroups on subjects that included hobbies and work. He was the editor of an online newsletter about bicycles and used e-mail to gain ideas for the newsletters as well as to distribute them. He used FTP and Telnet regularly for both work and hobbies. He used the Internet to search for a CD-ROM drive to buy, to get information on Hondas, books, to locate the sound track to a movie, and to search for a game. He used the Internet to keep up with his bicycling hobby and he also kept in contact with his brother-in-law and his niece through the Internet.

Interview summary -- This participant spent most of his Internet time reading newsgroups, but he felt that he got

the most out of the Internet, "it is e-mail and FTP." He said he read newsgroups "just for general news, but I use them like for magazines." He liked e-mail "because I can get to anybody anywhere, I can talk to people, get information." But he said his e-mail is limited to "friends, family, people I meet on newsgroups." He liked FTP because it allowed him to get "access to software so I can try things without buying them." He used the Internet for work and for leisure purposes.

Combined summary -- Both of the data gathering techniques found that participant number 36 used the Internet for both work and leisure. He used e-mail (for some business and more personal contacts), newsgroups, and FTP the most, and he occasionally used Telnet. He even used the Internet to try and find a CD-ROM drive to buy.

Participant #39

Log entry summary -- He used an Internet service provider, America Online, and Compuserve on a daily basis, mostly to read and post to forums and newsgroups. He did not do any advertising, but used these services to make business contacts. He worked at a high school teaching students about multimedia, so many of the subjects he read about in newsgroups and forums were on subjects related to this. He used a little e-mail. He also occasionally used the services to check airline flights and to get news about the Kobe earthquake in Japan. Periodically he downloaded graphics that were useful to his work. He also read hobby newsgroups about

Star Trek.

Interview summary -- This participant said that he used the Internet "to survive." He lives in a very remote area far away from any big cities, and he owns and operates a "production company." He used the Internet, America Online, and Compuserve "to find out about things" that have to do with his business. He was also a teacher at a high school and he taught about video, so the Internet helped him plan his lessons and fix software that he needed to use. He said he used the newsgroups and forums the most and that he also used e-mail. He used the Internet a little for leisure and personal contacts, but mostly for his business and work. He didn't really advertise about his production company, but he did make many business contacts.

Combined summary -- Both data gathering techniques found that participant number 39 used the Internet (and America Online and Compuserve) mostly for business, for his production company and for teaching. He used the newsgroups and forums most frequently, with some e-mail as well. He used the Internet to get information that would normally be impossible to find in the remote area that he lived in. He used the Internet to make and keep business contacts as well. He used it a little bit for leisure purposes.

Appendix G

Adoption Profiles

Participant #2 first read about it in the early 1970s in a science magazine.

Participant #3 first read about electronic media in general in books, but his first knowledge of the Internet was when his uncle told him in 1988.

Participant #4 heard about networks in college, but read about the Internet in a magazine in 1989.

Participant #5 first joined Prodigy (through her father) and BBSs, but heard about the Internet through her father in 1984. He had read about it in the newspaper.

Participant #7 also started with BBSs when a friend gave him a modem in 1992. Six months later a coworker told him about the Internet access at work.

Participant #10 first read about it in a computer magazine in 1993.

Participant #14 first heard about the Internet from a coworker in 1980.

Participant #16 was first introduced to BBSs in 1984 by a friend who ran one, but he did not hear about the Internet until 1990 when a coworker told him about it.

Participant #18 first experienced electronic communication when his parents got a Prodigy account in 1991. A friend then exposed him to a BBS. But his mother first told him about the Internet in 1993.

Participant #19 knew about the Internet from its inception in 1960 because he was working with the military, so it was a job related finding.

Participant #21 first heard about the Internet in 1985 from a friend.

Participant #22 started with a BBS she discovered about through a friend in 1992, and through talking with people on the BBS and reading files she learned of the Internet.

Participant #24 first read about BBSs in a magazine in 1984. A friend told him about the Internet in 1989.

Participant #25 first read about the Internet in 1980 in a magazine.

Participant #29 got access at work before he had ever heard of it, although he was already a BBS and Compuserve user from the early 1980s after reading about them in a magazine.

Participant #30 first heard about the Internet from a coworker in 1980.

Participant #32 first heard about it in college in 1980 from someone at school.

Participant #33 first heard about the Internet in 1972 when he was in the army and a coworker sent him information on it.

Participant #36 first heard about the Internet in 1980 from a friend at work.

Participant #39 found out about Compuserve from a

friend in 1990 and heard about the Internet at work in 1993.